

PREMIERE ISSUE! Multimedia PC Games CD-ROM 3DO Mac Games

Electronic Entertainment

THE ENTERTAINMENT RESOURCE FOR THE INTERACTIVE AGE



101

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Virtual Reality

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January 1994

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Face the Future

What's a bunch of hard-nosed reporters and editors doing in a place like this? As a cop reporter in Miami, I used to earn my pay check exposing dirty politicians and writing crime stories that would curdle the cream in your morning coffee. Now I'm playing games and toying with multimedia products for a living. But I didn't sell out—*not* by a long shot.


This new industry obviously needs a watchdog. If you don't believe it, read the papers. Or the business mags. Or the trade pubs. These days, you can't pick one up without wading through some breathless article chock full of the hot new buzzwords—interactivity, multimedia, virtual reality, edutainment—you get the idea.

Today's consumers need a publication that can objectively review these products, a magazine that isn't afraid (or too technically intimidated) to separate the facts from the hype. To give you the bottom line on whether the latest gizmos actually live up to the brilliant buzzwords on their boxes. And there's absolutely nothing on the newsstand that's doing that. Nothing, that is, until now.

Electronic Entertainment is the first magazine giving you the inside scoop on the hardware, multimedia titles, and games flooding the market. You won't find empty sound-bites, boring business products, futuristic mumbo-jumbo or kiddiebook games copy here. My team of cut-throat journalists will tell you what's a great buy, what not to waste your money on, and what technologies are coming around the bend.

Inside this premier issue, you'll find information not available in any other magazine. Look for the latest in interactive entertainment news and trends up front in Sharp Edge, hands-on multimedia software and hardware reviews in Spotlight, and unbeatable coverage of PC, Mac, Sega CD, and 3DO games in our 22-page State of the Game section. Need expert advice and insight? Find it in Tech Spot, where you can get down and dirty with your equipment.

And when we cover such futuristic trends as interactive TV and virtual reality, we don't just tell you what things will someday be like. We show you what's up today. Dan Tynan's feature on interactive TV includes the ultimate guide to the U.S. cities that are going to get ITV services. And we do the same for the new wave of virtual reality centers in Sweaty Palms. In coming months, we'll explore interactive rock 'n' roll and Hollywood's invasion of the video game industry, and deliver hundreds of incisive reviews of cutting-edge hardware, software, and games.

So if you're looking for a way to make the most of your entertainment dollar, you've found it. *Electronic Entertainment*. 

In photo, left to right: Donna Meyerson, Beth Cataldo, Gina Smith, Christopher Lindquist, Fredric Paul

GS

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Editor in Chief
Gina Smith

Managing Editor
Beth Cataldo

Technical Editor
Christopher Lindquist

Games Editor
Rusel DeMarie

Features Editor
Fredric Paul

Associate Editor
Donne Meyerson

Editorial Assistants
Cote Bayless, Sarah Tilton

Contributing Editors
Peggy Berg, Charles Berman, Paul Bonner, Nolan Bushnell, Carol Ellison, Keith Ferrell, Gregg Keltner, Daniel Tynan, Don Steinberg, Rusty Weston

DESIGN

Director of Creative Services Francis Mao
Art Director Michael Kavish
Designers Lori Barra, Jen Davis, Kathy Marty

PRODUCTION

Production Manager Patricia Ferguson
Assistant Production Manager Joy J. Ma

NATIONAL ADVERTISING OFFICE

951 Mariner's Island Blvd., Suite 700, San Mateo, CA 94404
(415) 349-4300

National Advertising Director John Stelling
Advertising Coordinator Michelle Whitley

Western Region (415) 349-4300

Sales Associate Tiffany Wallace
Eastern/Central Region Russ Hoefler
Sales Associate Sherry Halberg

National Accounts Manager (708) 441-0781
Sales Associate Jim Shepherd
Kyla Preston

(415) 349-4300

MANUFACTURING

Director of Manufacturing Fran Fox
Manufacturing Specialist Kim Hansen, Cathy Theroux

CIRCULATION

Circulation Director Holly Kingel
Subscription Promotion Specialist Marcie Newlin
Fulfillment Specialist Randy Randolph
Circulation Coordinator Karen Bollens
Single-Copy Sales Kemco Services
(603) 824-0524

MARKETING

Director of Marketing Debra Vernon
Marketing Manager Valerie Hennigan
Marketing Specialist Donne Duell
Marketing Associate Cindy Perrowe

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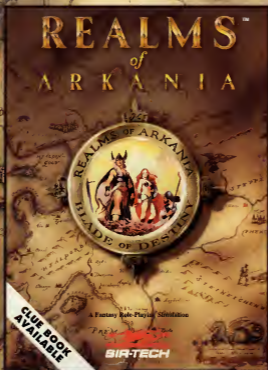
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A Sight for Sore Eyes

Congratulations on your first issue. It's great to see a publication devoted to the convergence of computers and consumer electronics. Consumers are now active participants in their entertainment. We can choose to watch movies, run programs, or play games without leaving the couch. And with all of the new game machines being introduced, we will need expert advice on what's hot and what to avoid.

Tim Bigneress

Mopb's Outpost on the Digital Frontier

Orinda, California

I think covering electronic entertainment is right for the times! It is about time we had a publication that is evaluating entertainment from a consumer's perspective, rather than being a computer trade publication in disguise. Good luck and let the games begin!

David Strom

Port Washington, New York

We're long overdue for a fun, attractive game magazine that you won't want to put down. Please don't be your typical game magazine with drawn-out reviews. Add some spunk and real graphics. Please make it interesting. We gamers desperately need a good, resourceful magazine. Go for it!

Max Myers

Houston, Texas

I've heard that *E2* is going to be more than a typical gaming magazine. What I'd like to see is a thumbs up or thumbs down on games and other entertainment software. Like a lot of people, I'm tired of wasting my time and money on useless software.

I'm glad you'll be covering the new forms of electronic entertainment—virtual reality theme parks, and interactive TV—because I need a source to tell me what's happening.

Adam Mitchell

Winter Park, Florida

When I first heard that *PC Games* magazine was going to disappear I was sad. Then I heard that it is changing its name to *Electronic Entertainment*, and I was happy!

Then, someone told me that *PC Games* is going to be just a section in *Electronic Entertainment*, so I was sad again. Finally, I found out that the game reviews are going to be a big section. So I'm happy again.

Martin Blate

Chicago, Illinois

A Resourceful Source

I saw an article about *Electronic Entertainment* in the *Wall Street Journal* and have been looking forward to your first issue. It's great to have a magazine that will let me get serious about having fun with my computer.

Businessmen are people, too, and PCs aren't just for spreadsheets. On weekends, my home PC gets a real workout with games, my kids' educational software, and CD-ROM titles. I'm looking into editing my home videos on my PC, and I need advice and information.

Name Withheld

Boston, Massachusetts

I just purchased a CD-ROM drive for my home computer and I need to find out what's out there. Most magazines are geared toward people buying computer products for work or just hard-core gamers.

I want to get my nine-year-old daughter interested in computers. I'm looking forward to your coverage of children's software that's not the shoot-'em-up, beat-'em-up type. I would also like to see more articles on educational games. I hope your magazine can help me out.

Rebecca Harp Sprinkle

New Orleans, Louisiana

Too many magazines get wrapped up in boring, overly technical reviews that look more like slick sales brochures than unbiased articles. I hope that *E2* will tell me the best ways to use the latest products, not simply print page after page of their features. Give me new ideas, not fluff! And because virtual reality, multimedia, and interactive systems

are still relatively new technologies, I demand accurate, concise information from the publications that I subscribe to.

Zory Garcia

Riverdale, New York

Revenge of the Nerds

E2 should be the magazine to finally set the record straight about electronic entertainment lovers. It annoys me when I hear people call gamers "antisocial" or "computer nerds" simply because we enjoy a rousing game or two of Tetris Classic.

Both my desktop and laptop PC are loaded with all the cool Windows-based games and I own a CD-ROM drive, but you'll never find me home alone on a Saturday night.

Lance Maltes

Canyon Lake, Texas

Into the Next Millennium

Multimedia, virtual reality, interactivity—the hip words of the nineties. Everyone seems to be using these words to sell their software and hardware. Let's see... the year 2000 is right around the corner. What will the hip words be then?

Beth Paravati

San Francisco, California

Will CD-I be the hardware of the future? I'd like to decide (soon) which CD interactive box to purchase, but I don't want to end up with the modern equivalent of the once-popular eight-track player. Do the editors of *Electronic Entertainment* have some sort of crystal ball, or must I roll the dice and take a big risk?

Maria Teresa Foss

Montpelier, Vermont

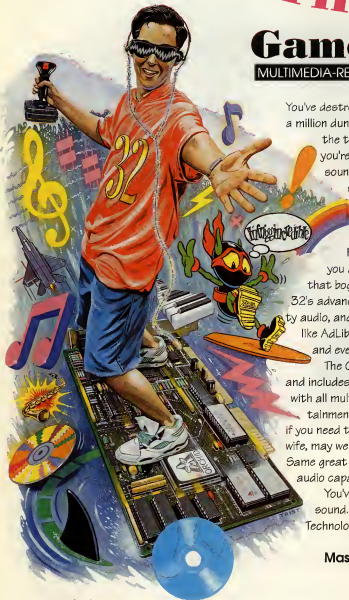
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Got something you want to get off your chest? Do it! Write, fax, or e-mail us at: Letters to the Editor, c/o Electronic Entertainment, 951 Marinier's Island Blvd., Suite 700, San Mateo, CA 94404; fax: 415-349-7781; MCI ID: 619-7340; and CompuServe: 73361, 265.

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GROUND ZERO, TEXAS™—Aliens disguised as humans are ready to exterminate the entire human race. It's up to you to stop them. Uncover their plot, figure out how to kill them (man-made weapons only stun them) and annihilate their forces before it's too late. But be careful. Screw up and you'll be reduced to subatomic particles of radioactive fallout.

like you're in the room with them. Which, in a way, you are. What does all this TruVideo™ stuff mean? It means your optic nerves are in for a workout. It means you should go try these games. It means you may soon be wearing your hair differently. It means these games are indeed the next level. It means 110 volts never felt so good.

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SHARP EDGE

IndyCar Racing Takes The Checkered Flag

Most car-racing sims are fun enough; they're just not very realistic. Sketchy graphics make crashes more annoying than dangerous. But Papyrus Publishing's upcoming **IndyCar Racing** may be the exception. The prerelease version we saw looked so true to life you'll actually be scared of hitting the wall.

Even in its early form, *IndyCar Racing* combined smooth, texture-mapped graphics with a solid feel to give you sensations as close to real racing as possible. But as any Brickyard veteran knows, you need the horsepower to make it fun. *IndyCar Racing* demands at least a 486-based PC to deliver top performance.

A.J. Foyt and Emerson Fittipaldi know that victory depends on details: missing a shift, braking too late, or even not enough air in the tires can mean the difference between a jaunt to the winner's circle and a trip to the hospital. Fortunately,

Papyrus reproduces those details in a way that will have you spending lots of time fine-tuning your cars before you send them out on the track.

Suspension, tire pressure and composition, fuel, aerodynamics—you can adjust and test just about everything. Raining on race day?

Better mount the rain rubber. But remember: A car that kicks butt on the ovals can be a deathtrap on a road course.

When your car acts up, bring it to the pits. Adjust the wing, add some fuel, and head back into the race, just like the real thing. Better make it a quick stop, though. Your opponents are passing you all the time—just like the real thing.

Once you hit the track (several are available), you'll love the awesome visuals. Mash the pedal, and the Goodyear logo on your tires blurs. Billboards fly by at 200 mph. And as tracks get used and abused, the "groove," the best line for maximum speed through the corners, starts showing through. So take a spin. Just don't forget to hug the wall before you hit the turns. (Papyrus Publishing; 617-868-5440; DOS, \$74.99.)

—Christopher Lindquist

Weird but Beautiful

Memphis's odd obelisks may look like something off a Led Zeppelin album cover, but this is a complete multimedia upgrade package cum boom box. The Memphis chassis contains a double-speed



CD-ROM drive and removable stereo speakers. The whole thing connects to your PC with a sound card that you or your local dealer can install. And Memphis also works great as a regular audio CD player. At nearly a grand, it's expensive—but worth it if you want an incredibly easy (and hot-looking) multimedia upgrade. (Media Vision; 800-845-5870; PC, \$999.)

—Christopher Lindquist



Edgar Death's
rockin' gig in the
Sonic Cemetery



Is There Rock After Death?

The year is 1998. The place, Alternative Earth #23. You are a music-video director wandering through the Plane of Distortion looking for fresh material. And suddenly, in front of you in the misty night, reclusive megastar Edgar Death rises out of an open grave and strums a creaky dirge.

Aim your camera and grab some video of this powdery man and his brawny backup band. Deposit this fiery footage in your interplanetary guitar case and head back to your high-tech video sequencer. It's time to assemble the hottest music video the planet has ever seen. But will it sell?

That's the big question in **Total Distortion**, an offbeat CD-ROM game grounded in rock 'n' roll. To win this music-video adventure game, you've got to shoot, direct, and edit an appealing rock video and sell it to such video distributors as Stevie Groovie—one demanding media mogul.

Total Distortion is the creation of Pop Rocket, a quirky four-designer firm based in San Francisco's sixties-obsessed Haight-Ashbury district. President Joe Sparks, who codeveloped the cult hit *Spaceship Warlock*, is out to redefine game play: Instead of blamming you with laser fire or endless puzzles, *Distortion* makes you negotiate your way through a surreal underground world. And you need wits and imagination to come out on top.

Interestingly, Pop Rocket is targeting first-time CD-ROM buyers. "I know there is a much broader audience for this kind of media," says Sparks. Maybe so: By year's end, Pop Rocket was claiming an astounding 10,000 advance orders.

Total Distortion for the Mac should be hitting stores now, with PC and 3DO versions due later this year. And watch for spin-offs, including Total Bliss (New Age), Total Twang (country), maybe even a Total Distortion interactive TV channel. Who knows, if the current seventies revival keeps gaining momentum, we may see a Total Voltron. (Pop Rocket; 800-245-4525; CD for Mac, \$99.)

—Beth Cataldo and Jan Boyd

Coming Soon to A PC Near You...

"Hey! That guy on my screen looks like, uh, you know! What's-his-name!" Yep, that's Brian Keith of serious sixties sitcom fame. Keith isn't doing a lot of TV these days, but he—and Margot Kidder and Russell Means—will star in **Under a Killing Moon**, a PC-based interactive detective flick due later this year. Stay tuned. (Access Software; 800-800-4880; CD for Win; \$89.)

—Christopher Lindquist



Spin Me Faster!

Stop whining about your sluggish CD-ROM drive and check out NEC Technologies' **MultiSpin 3X**, the new souped-up model in its 3X line of drives. This speedy disc player spins at three times the rate of a normal drive, which means smoother motion video and animation for your titles. And a line of quad-speed drives is due out later this year. (NEC Technologies; 800-388-8888; \$600 external, \$500 internal.)

—Gino Smith



Sounds Like a Good Idea



You've heard of 3-D video, but 3-D sound? This new technology for "placing" sound is one of the most compelling games technologies emerging today.

QSound Virtual Audio, a technology from Canada's QSound Labs, creates audio illusions in much the same way that a ventriloquist throws his voice: Sound seems to come from above or even behind you, instead of from out of the left and right speakers. Already implemented in such Sega CD games as *Ecco the Dolphin* and *Jurassic Park*, Virtual Audio-equipped games feature music and sound effects that are vastly richer and more realistic than anything else on the market today. You need to hear it to believe it.

Virtual Audio isn't new to entertainment. Big names including Madonna, Roger Waters, Paula Abdul, and Sting have used it in their recordings, and QSound also made an appearance in the movie *Robin Hood: Prince of Thieves*.

But because you need to be sitting exactly between your two speakers to fully experience the illusion, PC and Mac multimedia systems are the ideal platforms to take it to the limit. On a system equipped with QSound, planes sound as if they're whizzing overhead, and footsteps like they're sneaking up behind you.

"QSound is cool because it actually simulates (Dolby) SurroundSound. It brings computer-based sound to a new dimension," says Arnold Wald-

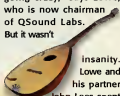
stein, director of marketing at Creative Labs. This winter, Creative will be shipping an upgrade to its Sound Blaster ASP board that will include QSound, along with kits for developers who want their games to support it.

And Creative isn't the only company getting aboard. Japan's Capcom has signed an agreement to add QSound to its arcade games. IBM reportedly is working on a way to add it to some PS/2 systems. Such game makers as Brøderbund, Virgin, Ocean, and Sierra are considering QSound support, too. And QSound itself is working on a joystick that will have the technology built in.

Like so many innovations, Virtual Audio was discovered accidentally.

Back in 1986, rock producer Danny Lowe stumbled upon the audio illusion while experimenting with multiple-mike recording. When he played back one particular recording, he heard the music coming from somewhere other than his speakers.

"It sounded like it was coming from about 90 degrees to my right. I thought I was going crazy," says Lowe, who is now chairman of QSound Labs. But it wasn't



insanity.

Lowe and his partner

John Lees spent years running more than a million experiments to perfect their first product, a multi-channel processing system for professional producers they called the "QSystem."

Eventually, QSound figured out how to cut costs by implementing the technology in software and letting hardware makers program it into special Digital Signal Processor (DSP) chips. That's the secret behind the QSound-capable hardware and games that are coming out right now.

So will QSound become the next audio standard? Given its momentum, the question isn't if, it's when. And you won't hear us complaining on that score.

—Gino Smith

Forgotten Castles' Future Fiends

Get that Ruzak before he gets you! The fiendish armadillo is just one of the crazed freaks you'll face

in *Twin Dolphin's* weird 3-D adventure. *Forgotten Castles* features great graphics and super-smooth scrolling, and it works with Logitech's CyberMan tactile-feedback controller. (Twin Dolphin Games; 800-245-4525; DOS, \$79.95.)

—Christopher Lindquist



TURBO TOUCH 360,TM THE STATE OF THE ART PC GAME CONTROLLER!



For use with IBM® PCs
and compatibles



**Gives you better
diagonal control**



**Gives you easy
circular control**



**Faster movement for
higher scores**



**No more blisters or
"numb thumb"**

Extensively consumer-tested with game players, software developers and computer game reviewers, the Triax Turbo Touch 360 controller brings a new dimension of control and comfort to computer game playing. It's a breakthrough product, offering the benefit of higher scores and longer play without



TRIAXTM
TECHNOLOGIES

"thumb fatigue." Just pass your thumb or index finger over the control sensor—you don't have to push down. And, thanks to better diagonal and circular (360°) control, the newest and most challenging games are easier to control and more fun to play. The Turbo Touch 360 is the right product at the right time.

For the name of your nearest Turbo Touch 360 retailer or to place an order, call 1-800-858-7429

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Circle 146 on Reader Service Card



The Sporting Stats

Stat freaks will thrill to a new series of entertaining CD-ROM multimedia guides to top team sports. Compton's New Media teamed up with *The Sporting News* to create **The Sporting News Pro Basketball Guide**, a roundball follow-up to the football version released last fall. A baseball title is scheduled for when the season opens. Enhanced with plenty of video highlights and priced at under \$40 per sport, these Windows programs feature full statistics from the previous season plus other information, all cross-referenced by player, team, and category. (Compton's New Media; 800-862-2206; Win, \$39.95.)

—Fredric Paul

CD-ROM: The Final Frontier

A new "Star Trek" spacelike simulation is coming your way this spring. You'll join Picard, Riker, Data, and the rest of the gang in their search for the Fifth Scroll in Spectrum HoloByte's *Star Trek: The Next Generation*. You won't need your own starship to navigate this animated adventure, but you will need a PC CD-ROM drive or a 300 player. (Spectrum HoloByte; 800-695-4263; 3DO, CD for DOS, price not available.)

—Donna Meyerson



A Quiet Debut For Interactive Music

What MTV did for music on television, interactive music CDs are about to do for music on computers.

These new double-duty discs play like regular audio CDs on your stereo but display new material—including liner notes, behind-the-scenes interviews, photos, biographies, and lyrics—when you pop them into your computer's CD-ROM drive.

One of the companies pioneering this new genre is a small California firm called Ebook. In recent months, it's released a number of interactive music CDs. But don't expect cutting-edge titles: So far, the collection

comes from old favorites in jazz, classical, and rock 'n' roll genres.

Its **Vivaldi** disc, for example, includes a complete collection of the *Four Seasons* concertos and information about the composer's life and times (Electronic Arts; 800-245-4525; \$24.95). **Louis Armstrong** combines a collection

of liner notes from several of Satchmo's albums with recordings of such standards as "Heebie Jeebies" and "Dear Old Southland" (Compton's New Media; 800-862-2206; \$29.95). **Duke Ellington: A Private Collection** brings you never-before-released family photos and interviews with the jazz legend's son

(Time Warner Interactive Group; 800-482-3766; approximately \$35).

One somewhat unusual entry is Bernie Leadon's upcoming **Run CW**, a collection of country tunes that's been given a Motown sound by the Grammy-

winning former Eagles guitarist.

More titles from a variety of publishers are expected to hit



The Vivaldi disc includes detailed information about the composer's life and times.



Interactive Louis Armstrong is a combination of liner notes and recordings.

the shelves this year—reportedly including a history of rock guitar from Eric Clapton and a CD-ROM version of The Who's rock opera *Tommy*. Look for these titles as well as other interactive CDs at your local record stores and software retailers.

—Donna Meyerson

PAGAN

Ultima VIII



AVATAR,[™]
YOU'RE NOT
IN BRITANNIA[®]
ANYMORE!

Foiled by your defense of Britannia, the evil Guardian transports you to a world already under his dominion. Now you must confront alien realms and powerful new enemies in a battle without allies. But wait! Perhaps more has changed than just the battlefield . . . ?

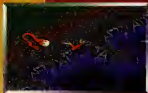
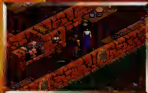
- Incredibly smooth and lifelike animation — 400 frames of art per character (1200 frames for the Avatar) and 10 times the art of any previous Ultima!
- A new, more natural perspective.
- Compatibility with EMS, XMS and all other common memory management systems.
- Twice as many frames per second, producing a richer, faster story in this luxuriously detailed world!

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Available at a software retailer near you, or call 1-800-245-4525 for MC/Visa/Discover orders.

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You're outgunned.
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Stalked by a relentless
robotic assassin.

You're desperately searching every dark corridor on a deserted spaceship for DNA keys that reveal how to destroy this mechanical killer. Because only then can you disarm the ship's weapons and save the universe before it's blasted into oblivion.

The critics think this futuristic nightmare is a dream come true.

New Media says it's "more than a great game—it's sci-fi space opera and film noir at its best." *Wired* raves that "Helix is a stunner." And that it has the "gun-to-your-head urgency of an arcade game." So you know it's not another CD-ROM game that crawls.

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Circle 121 on Reader Service Card

NIGHTMARES BEING YOU'RE UT TO.



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Gambling With MPEG Compression's Bold New Look

Why doesn't the video on your PC look as good as what's on your TV? If you haven't asked this question yourself, you've probably heard it at least a dozen times.

The problem, in a nutshell, is storage. To get video flashing at TV's 30 frames per second, your PC needs either monstrous amounts of hard disk space or a video compression card. But these solutions typically cost big bucks, and few people want video that bad.

Happily, the situation is about to improve. A number of companies are starting to sell affordable video compression products—that is, cards that cost from \$500 to \$1,500. It's a development that'll bring you dramatically better-looking video in your games and multimedia titles. But don't expect it to happen immediately.



Take a Flight On the Other Side

If you've always wanted to fly for the Dark Side, don't miss *TIE Fighter*—the upcoming sequel to LucasArts' top-selling *X-Wing* space-battle simulator. The new game lets you join Darth Vader and the Imperial Forces to fight the Rebels. Look for it this spring. (LucasArts Entertainment; 800-782-7927; DOS, price not available.)

—Donna Meyerson

Introducing Moving Pictures

At the forefront of the new market is California's Sigma Designs and Georgia's MIE Systems. Both companies are shipping cards (Sigma's \$449 Reel Magic and MIE's sub-\$1,500 MPEG Player) that con-



Return to Zork has an environment ripe for MPEG.

form to the Moving Pictures Experts Group's (MPEG) decompression standard. And both companies say they've managed to talk some developers into adding MPEG-compatible video to their software. These include Trilobyte's *Eleventh Hour*, Infocom/Activision's *Return to Zork*, and Interplay's *Lord of the Rings*.



The full-screen scenes from Interplay's *The Lord of the Rings* will be even more stunning with MPEG.

But there's a catch. Interplay's Bill Dugan, producer of the CD-ROM version of *Lord of the Rings*, admits that while the MPEG-compressed images in *Lord of the Rings* are "gorgeous," few PC and Mac owners have MPEG cards. For that reason, it doesn't make sense to mass-produce MPEG titles. For the time being, at least, Interplay will offer the MPEG version of its game only through mail order.

Jumping a Hurdle

It's the classic catch-22. Software vendors won't create lots of MPEG applications until consumers have the hardware to run them, while hardware vendors will have a hard time convincing customers to buy a new board until there's a decent amount of software around to take advantage of it.

Adam Silver, digital video product manager at board maker Orchid Technology, agrees. "There's not a lot of material out there that's MPEG compressed," Silver says, "so there's not a lot of demand to decompress it."

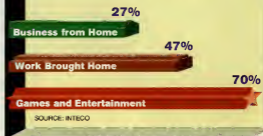
Still, if MPEG stumbles, other video-compression technologies are waiting in the wings. Intel's Indeo, SuperMac Technology's Cinepak, and Media Vision's Captain Crunch don't support full-screen, full-motion video yet. But as new chips speed processing, improved versions of these techniques could hit the market by next year.

Can't wait? Then the best thing to do is buy an MPEG product or game right now. As always, it'll be up to the early adopters to drive this market forward. And the sooner that happens, the better.

—Christopher Lindquist

Home Software Use

What do you use your computer for at home?



*A long time ago
in a galaxy far, far away...
good and evil clashed.*



Now, the Force is with you.

THE SOFTWARE TOOLWORKS' STAR WARS CHESS

Now available in this galaxy
for IBM PC and compatibles
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Combine Star Wars characters with one of the oldest strategy games in the world and you get **The Software Toolworks' Star Wars Chess** -

the most thrilling animated chess game in the galaxy!



The Force is with you

Relive battles between the Rebel

Alliance and the evil Empire through astounding original artwork and a powerful chess program.



Up to 72 animated 3-D capture sequences!

It's like making your own Star Wars movie on a chessboard! Through dazzling animation, Leia, Luke, C-3PO, Darth Vader and other characters you love come to life in brilliant 3-D sequences. Up to 72 unique capture moves and authentic Star Wars music and sound effects make this a chess program like no other in the universe.

It's your turn to pit yourself against the dark side... and may the Force be with you!



For the store nearest you or to buy, call
1-800-234-3088

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Circle 53 on Reader Service Card

Gentlemen, Choose Your CDs

The biggest names in electronics want to sit on top of your TV set—whether you want them there or not.

Over the last few months, a Who's Who of consumer firms, including Nintendo, Philips, Sega, Pioneer, Commodore, and AT&T, has announced or shipped CD-ROM-based set-top boxes for your TV. All of them want their box to be the games and multimedia system at the center of your living room.

So which will it be? It's far too soon to tell which one of these—if any—will work its way into your home, but this battle definitely makes for great spectator sport. Here's a lineup.

3DO Interactive Multiplayer

Sanyo, AT&T, and Panasonic are just three of the companies shipping or planning to ship systems based on technology from tiny 3DO, a start-up led by Electronic Arts founder Trip Hawkins.

The first 3DO system, Panasonic's FZ-1 REAL 3DO Interactive Multiplayer, is the hottest-performing set-top CD box available, with advanced graphics circuitry that easily outpaces PCs and Macs, not to mention cartridge systems. The 3DO Company also plans

to turn the system into a multipurpose command center for games, multimedia, interactive TV, and access to the so-called data superhighway.

But a lofty \$700 list price for the player and a limited selec-

"We've created breakthrough processing technology that has the power to captivate and involve everyone more than ever before."

Trip Hawkins, The 3DO Company

tion of multimedia titles and games may keep this set-top box out of the mainstream for awhile.

Pioneer LaserActive

If Panasonic's is the most powerful system, Pioneer's LaserActive is definitely the most flexible. The LaserActive systems

can play 5-inch audio CDs, 12-inch LaserDisc movies, and the new 8- and 12-inch LaserActive titles. With add-ons, you also can run Sega CD and Nintendo titles.

Only a handful of LaserActive-specific titles are around (from Virgin, Sega, and Trilobyte—a few others say they're working on more). That's unfortunate, since LaserActive titles support a full hour of motion video and digital audio.

But all this doesn't come

cheap. At nearly \$1,000 for the base unit and up to \$600 per additional module, LaserActive is unlikely to become a mass-market phenomenon.

Philips CD-I

If you don't believe that price counts, look at Philips CD-I. Listed at \$699 when they were first introduced in 1991, CD-I players now go for a more reasonable \$400. But early sticker shock held down sales and discouraged independent title developers.

That's starting to change. Philips recently came out with an add-on to handle movies recorded in the Video CD format based on the Moving Pictures Expert Group (MPEG) compression formula. And CD-I is beginning to attract some innovative new titles, including *Voyeur*, an interactive political thriller starring Robert Culp, and an interactive version of rock star Todd Rundgren's *No World Order* release.

Sega CD

While its competitors tangle over the high-end market, cartridge and CD game maker

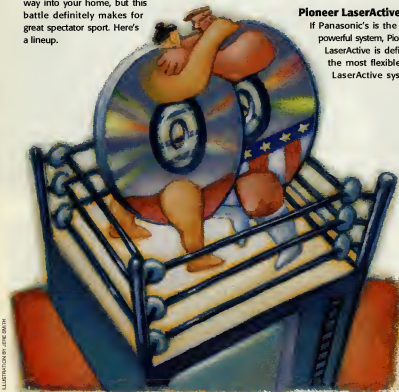


ILLUSTRATION BY JETTE SMITH

CD Format Scorecard

	PRODUCT	VENDOR	AVAILABLE	PRICE	COMMENTS
	Sega CD	Sega of America	Now	\$229	Runs virtual-reality games and CD-based movies. Its 64-bit follow-up, the Saturn, is due by fall of 1994.
	REAL 3DO Interactive Multiplayer	Panasonic	Now	About \$700	3DO technology will also show up in players by AT&T, Sanyo, and other companies.
	LaserActive	Pioneer Electronics (USA)	Now	\$970 base plus \$350-\$600 per module	Plays LaserDisc movies and audio CDs. Add-on modules play Sega and NEC games and LaserKaraoke discs.
	Jaguar	Atari Computer Corporation	CD-ROM in mid-'94	\$200 for system plus about \$200 for CD-ROM add-on	IBM will build the CD-ROM add-on for the Jaguar, which should deliver the highest-quality images in the industry when it ships in early 1994.
	CD-i	Philips Interactive Media of America	Now	\$399-\$499 plus \$250 for digital video cartridge	Despite being first to market, CD-i's high prices have held back sales.
	Amiga CD ³²	Commodore Business Machines	Now	\$399	Using the Amiga computer's graphic chip set, CD ³² runs older CDTV titles as well as new programs now under development.

Sega of America has been making a mint off the low end, selling an estimated one million units by Christmas. There are more than 85 Sega CD titles now available. Though the 16-bit players have a reputation for being flimsy and slow, their \$229 price tag seems to make up for everything.

Like everyone else, Sega is betting on a video future, but it doesn't yet support Video CDs. Instead, the company offers a cartridge that lets the Sega CD system play CD movies com-

system that it's working on with Japanese consumer electronics giant Hitachi. Its rival, Nintendo, is also working on a 64-bit box that's scheduled to hit the market late 1994 or early 1995.

Atari Jaguar CD

Atari, once the power in video games, hopes that its leading-edge technology will get it back in the game. The company plans to enter the market with a CD add-on for its \$200 64-bit Jaguar gaming

"We do hope we will go on to much more than just playing games."

Sam Tramiel, Atari Computer Corporation

Atari executives have reportedly been talking with Time Warner and a Baby Bell company about the Jaguar's being used as a set-top box for controlling interactive cable TV. But 3DO also is trying to target that market and has already established a partnership with Time Warner.

Commodore Amiga CD³²

Commodore Business Machines, also trying to regain its former glory, plans to edge back into the picture with its new Amiga CD³² system. Available in limited areas now and due out nationally sometime in 1994, the \$400 CD³² is based on the same advanced graphics chips found

in Amiga personal computers.

In addition to the titles that are now being developed specifically for CD³² by vendors such as Acclaim, Psygnosis, and Virgin, the new box runs titles developed for the older CDTV format, which enjoyed limited success in Europe and in the education market here. There are more than 50 titles available.

Confused? Join the club. There's a profusion of CD formats to choose from, with no certain answer to which is best. Here's how to cope: ignore the hype and concentrate instead on the software. Identify the games and titles you want, then buy the player that runs them best.

—Christopher Lindquist

"It's very difficult to stay incompatible."

Ultimately we should give the consumer a break and let all CDs play in all players."

Bernard Luskin, Philips Interactive Media of America

pressed with SuperMac Technology's Cinepak process.

By the fall of 1994, the company plans to ship its Saturn set-top CD machine, a 64-bit

deck in late 1994. But Atari is facing an uphill battle—relatively few game makers say that they intend to support the add-on.

Leader

The best-selling PC, Mac, and CD-ROM entertainment software

PC GAMES



Virgin Games' *Lands of Lore* logs in as the top PC seller.

- 1 Lands of Lore** Control your destiny and that of King Richard in this exciting fantasy role-playing game with action and magic. (Virgin Games; 800-874-4807; \$62.99.)
- 2 Imperial Pursuit** An add-on tour of duty for die-hard X-Wingers. (LucasArts Entertainment; 800-782-7927; \$29.95.)
- 3 X-Wing** Jump in and help the rebels in this space-flight simulator enhanced with extensive *Star Wars* voice footage. (LucasArts Entertainment; 800-782-7927; \$69.95.)
- 4 SimCity Classic** Create your own city where you set up residential, commercial, and industrial zones, mass transit, provide police and fire protection, and set taxes. (Maxis; 800-336-2947; \$39.95.)
- 5 The 7th Guest** Explore 22 rooms of a terrifyingly real virtual mansion in this interactive drama complete with live-action video. (Virgin Games; 800-874-4807; \$99.99.)
- 6 Betrayal at Krondor** A 3-D role-playing game based on Ray Feist's book series. (Sierra On-Line; 800-326-0654; \$42.45.)
- 7 Warriors II** Sequel to the original fantasy strategy game, with a new Diplomacy option and a great musical score. (Strategic Studies Group; 904-469-8880; \$69.95.)
- 8 Stronghold** The first strategic game with D&D-type characters that lets you control a world and create allies. The goal is to become the emperor and destroy all foes. (Strategic Simulations; 800-245-4525; \$59.95.)
- 9 Hardball III** Don't get caught stealing this advanced baseball simulation game complete with play-by-play commentaries and customizable players. (Accolade; 408-985-1700; \$59.95.)
- 10 Links-366 Pro** This well-designed golf game offers spectacular graphics modeled on the famous Harbour Town golf course. (Access Software; 800-800-4880; \$39.95.)

MAC GAMES



Sword fights and magic potions make *Prince of Persia* the top Mac game.

- 1 Prince of Persia** Save the beautiful princess in this rammed cinematic action adventure filled with sword fights and magic spells. (Brederbund Software; 800-521-6263; \$34.95.)
- 2 SimCity Classic** Create your own city where you set up residential, commercial, and industrial zones, build mass transit, provide police and fire protection, and set taxes. (Maxis; 800-336-2947; \$39.95.)
- 3 Microsoft Flight Simulator 5.0** From takeoff to landing, you're in control of your choice of airplanes with improved graphics and realistic extras. (Microsoft; 800-426-9400; \$64.95.)
- 4 SimCity Supreme** An expanded and updated version of *SimCity*, with 17 additional cities, better graphics, and a new terrain editor. (Maxis; 800-336-2947; \$39.95.)
- 5 PGA Tour Golf** This realistic simulation lets you tee off at four different 18-hole golf courses. (Electronic Arts; 800-245-4525; \$59.95.)

CD-ROM TITLES



The terrifyingly real *7th Guest* tops off at number one on the CD-ROM chart.

- 1 The 7th Guest** Explore 22 rooms of a terrifyingly real virtual mansion in this interactive drama complete with live-action video. (Virgin Games; 800-874-4807; \$99.99.)
- 2 King's Quest VI** An adventure love story that takes you through an enchanted world of mystery. (Sierra On-Line; 800-743-7725; \$79.95.)
- 3 Romaniart** An exciting array of icons, screen savers, full-motion video, and sound effects. (Moon Valley; 800-443-2748; \$29.95.)
- 4 MPC Wizard** A configuration and testing utility for multimedia computers. (Avis Entertainment; 800-245-4525; \$14.95.)
- 5 Lord of the Rings** J.R.R. Tolkien's classic tale comes to life. As Frodo Baggins you lead your friends on an adventure to save Middle Earth. (Interplay; 800-959-4263; \$64.95.)
- 6 Day of the Tentacle: Maniac Mansion** A wacky adventure with tongue-in-cheek cartoon graphics and the characters from *Maniac Mansion*. (LucasArts Entertainment; 800-782-7927; \$69.95.)
- 7 Dune** Prove your worth to the ferocious Fremen warriors and lead them to victory over the powerful Harkonnens to gain control of Arrakis. (Virgin Games; 800-874-4807; \$69.99.)
- 8 Just Grandma and Me** Animated and interactive fun with *Bruderbund's* first Living Book, a storybook your child can play. (Bruderbund; 800-521-6263; approximately \$45.)
- 9 Indiana Jones and the Fate of Atlantis** Help Indy discover the fate of the Lost Continent in this action adventure based on the popular movie series. (LucasArts Entertainment; 800-782-7927; \$69.95.)
- 10 Compton's Encyclopedia Upgrade** An improvement to Compton's multimedia reference guide with additional videos, animation, slide shows, and more. (Compton's New Media; 800-862-2206; \$99.)

The Leader Board is a compilation of top-selling software in 1,300 retail stores for August, 1995. Some titles may appear in more than one category. Source: PC Data.

INTERACTIVE HORROR MOVIE

HERE NO ONE RESTS IN PEACE.

Dracula is back, driven by revenge and a hunger for human blood. Follow a trail of vampire brides, corpses, and wolf tracks through the streets of London. You direct the drama, suspense, and passion as you are drawn into a world of evil where every decision and action you make is inextricably tied to the fates of those you love.

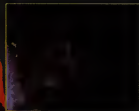
From the creators of
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Dracula

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Over 90 minutes of captivating video and an original gothic soundtrack draws you into the center of the action.



Over 150 riveting scenes propel you down multiple pathways toward the final confrontation.



Unique interactive experience that you've never encountered before.



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AVAILABLE ON CD-ROM FOR PC AND MAC

Now you see it. Now you don't. The land of Kyrandia is disappearing piece by piece and all the evidence points toward one perilous conclusion: a curse. Thus begins *The Hand of Fate*, second in the *Fables & Fiends*



toward one perilous conclusion: a curse. Thus begins *The Hand of Fate*, second in the *Fables & Fiends*

the offbeat, young mystic who must voyage to the center of the world to break the spell. Out of sync and out on foot, your aberrant journey reveals nothing is what it isn't. And on one hand.



seems. Everything is what it you can count your friends on Literally. Conspiring to push



the twisted edge of cinemagraphic entertainment, Westwood Studios has designed more puzzles and gameplay in the first few chapters of

The Hand of Fate
The Legend of Kyrandia,
advanced graphics



than in all of The most

on the market are first pencil tested, then painted on-screen to surrealistic perfection. Breakthrough



Trulight technology illuminates each scene more cinematically for a fuller, fourth



Shadow



Sunlight

dimensional picture. The new

State of Mind System, along with superior intuitive interfacing, enables you and over 50 characters to change your mind, mood and mayhem based on preceding events. Don't just play with your mind. Change the way your mind plays.



Grasp *The Hand of Fate* and kiss conventional logic goodbye.

Circle 21 on Reader Service Card

THE HAND OF FATE

Westwood
STUDIOS

WESTWOOD
STUDIOS
A THORN EMBROIDERED BY
Viggo



spotlight

ALL SYSTEMS GO

E2 Goes Under the Hood Of Three Jamming Multimedia Systems

For a while there, it looked like personal computers were about to become commodity items. Identical beige boxes with interchangeable processors and boring peripherals were about it.

But multimedia ripped that trend in the bud. To get the most out of the latest computer games and multimedia titles, you need a PC or Mac properly outfitted with video, sound, and a fast CD-ROM drive. And there's an endless array of choices out there.

You could assemble your multimedia powerhouse piece by piece, but if you're starting from scratch, it's definitely easier to buy a preassembled system. Plus, many manufacturers toss in a cool bundle of free games and multimedia software.

The three new systems detailed here, for example, supply everything you need to run today's most demanding titles.

■ CHEAP AND EASY

Macintoshes have always been easier to install than PCs, but Apple's new one-piece **Performa 550** is easier to set up than some toasters. Just take it out of the box, plug the power cord into the Performa's backside and a wall socket, hit

the switch, and you're off and running.

While Apple usually charges a premium for its design superiority, the Performa 550 is reasonably priced at less than \$2,000. Even better, your two grand buys you more than a bare-bones Mac for Morons: You get a fast 33MHz 68030-based computer.

You also get a decent selection of more than a dozen preinstalled software titles, including Grolier's Encyclopedia and Intuit's Quicken for home finance. You can run the programs on the built-in double-speed CD-ROM drive, watch them on its chassis-mounted 14-inch color monitor, and listen to them on a pair of stereo speakers with front-mounted volume controls.

Five megabytes of system memory come standard, but you can add more—up to 36MB—for memory-hungry software. Also standard are a 160MB hard disk drive and a 1.44MB SuperDrive floppy drive that reads both Mac and DOS disks. You even get a fax modem and software complete with an America Online account.

A personal computer can never be too cheap or too easy to set up, and the Performa 550 is about as cheap and easy as a Mac system can get. (Apple Computer; 800-538-9696; approximately \$2,000.)

■ A MACHINE FOR THE MARQUIS DE SADE

Duracom's **Multimedia DeskSaver 486/66DX2V** is a PC masochist. We punished it. We brutalized it. And it actually seemed to like it.

As a primary test platform at E2, the DeskSaver held up beautifully through

The Performa 550 is cheap—and easier to set up than some toasters.





Duracom's tough and powerful Multimedia DeskSaver packs enough high-tech toys to keep anyone happy.

months of use and abuse dished out by everything from Windows-based multimedia kidware to gargantuan 3-D games.

At almost \$5,000, the DeskSaver isn't cheap. But a brawny 66MHz 486DX2 processor puts the pedal to the metal. And an impressive 16MB of main memory comes standard, more than enough for even the most demanding multimedia graphics programs.

Games that look good on a standard 14-inch screen will blow you away on this system. A zip-quick ATI local-bus video card with 2MB of memory powers an expansive 17-inch color monitor.

The DeskSaver doesn't skimp on sound, either. A 16-bit Media Vision Pro Audio sound card drives Altec Lansing's splendid ACS 300 speakers.

In addition to its NEC double-speed CD-ROM drive, you get a huge 340MB hard disk with a 4MB backup controller to make it fly. And Duracom bundles a nice selection of software, including Compton's Interactive Encyclopedia, Brøderbund's Carmen Sandiego Deluxe, MicroProse's Mantis and Civilization, and Interplay's Battle Chess.

The big boys could take some lessons from little Duracom. The DeskSaver 486/66DX2V delivers exactly what multimedia enthusiasts need: high-quality, high-speed, high-end enjoyment from top to bottom. (Duracom Computer Systems; 800-551-9000; \$4,749.)

■ IT TOLLS FOR THEE

Packard Bell's 486SX/25 Multimedia Computer isn't as fast or as flashy as the Duracom DeskSaver, but it delivers all the basics for about \$3,000 less.

Packard Bell holds down the cost by using just enough ordinary hardware to get the job done. Powered by a 25MHz 486SX chip and 4MB RAM, the machine has plenty of juice for most game and multimedia titles.

A Sound Blaster Pro II-compatible sound card runs a Roland CS-10 speaker unit, which doubles as a monitor stand. The CS-10 unit features a pair of front-mounted speakers, volume and tone controls, and a headphone jack that doesn't require you to reach behind your PC. Local-bus video delivers snappy graphics through a standard 14-inch Super VGA monitor, while the 210MB hard drive has room for plenty of software.

One disappointment is its single-speed CD-ROM drive. It simply won't be fast enough to effectively run the next generation of multimedia titles. But Packard Bell spices up the basic package with some extras: a data/fax modem and even a PBTv3 card that lets you watch TV on your computer screen. Special software lets you capture images to your hard disk from a cable feed, a LaserDisc player, a camcorder, or a VCR.

You get great software, too. The Packard Bell Navigator guides beginners through Windows, while Microsoft Works for Windows and Microsoft Money can help out with household and small business tasks.

For gamers, there's a great selection of Software Toolworks programs, including Chessmaster 3000. (Packard Bell; 818-886-9998; \$2,299—less than \$2,000 without the PBTv3 option.)
—Christopher Lindquist

>>> THE BIG BOYS COULD TAKE SOME LESSONS FROM LITTLE DURACOM.

Plenty of bundled software and tasty extras—including a fax modem and TV tuner—make the Packard Bell Multimedia Computer a good budget option.



PHOTOGRAPH BY DAN CLARK

One Giant Leap For Mankind

If they can put a man on the moon, why can't they get decent full-motion video in a CD program?

That's the question we used to ask every time we looked at a space-exploration edutainment title. But when we found Sumeria's **Space: A Visual History of Manned Spaceflight**, we stopped asking. This is the first space title we've seen that displays crisp, clear moving video of astronauts and lunar takeoffs. And you can't beat the price—less than \$50 for a PC- and Mac-compatible CD.

The Mac version displays the better images. It supports the latest rendition of Apple's QuickTime video standard (version 1.6), which lets it display video in 240-by-180-pixel-sized windows—that is, 3 1/2 by 2 1/2 inches. That's a lot bigger than the piddly, postage-stamp-sized images you get from QuickTime for Windows 1.1, the latest release supported by PC multimedia titles.

But there's more to *Space* than its 90 minutes of video. There's plenty of descriptive text and a fascinating timeline that covers manned space flight from 1961 to the space station planned for the end of the decade. (The disastrous Challenger mission is a glaring omission, though.)

Well designed from the ground up, *Space* lets you navigate by clicking and scrolling with its speedy search engine. Sumeria makes the content available for reuse license free, so you can even export the video and still images to other files in Windows or on the Mac. Sample that. (Sumeria; 800-478-6374; CD for Win/Mac, \$49.95.) —Gina Smith

Spotlight

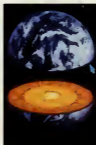
THE OUTER LIMITS

Discover Space Turns Your PC Into a Planetarium

Want to see what would happen if a five-trillion-metric-ton asteroid moving at 25 kilometers per second slammed into Texas? Brøderbund's **Discover Space** will show you, and it isn't pretty.

Think of this floppy-based DOS program as an interactive PBS special, with simulations and images courtesy of such authoritative sources as the National Optical Astronomy Observatories and NASA. *Discover Space* explains everything you've ever wanted to know—and a lot of things you probably don't—about the cosmos around us.

Discover Space makes noodling around outer space easier than channel surfing. As its 2001-esque soundtrack plays eerily in the background, even sixth-graders will have no trouble exploring the six main modules: Comets and Asteroids, Deep Sky Objects, Space Exploration, Star Maps, The Planets, and The Sun. Each module includes well-designed animations that simulate astronomical occurrences in crisp detail.



set periods of time. Another view of the sky, called Skyline, looks like what you'd see in books and astrological charts.

In the Sun module, you can animate solar flares and holes in the corona, show partial or total eclipses, and even split the sun in half to find out what's inside.

Another interesting (but scary) exercise lets you display the life cycle of the sun—from its birth until, they tell us, its inevitable death.

Unlike other astronomy and space titles, Brøderbund's *Discover Space* is content to do its job well, without striving for pointless glitz. It doesn't waste its energy, for example, trying to squeeze in video of the Apollo takeoffs or landings. It also works with a wide array of sound cards, doesn't require cartloads of RAM, and displays its stunning graphics in both 16-color and 256-color modes. All that adds up to a fun, informative program for high- and low-end computers. (Brøderbund Software; 800-521-6263; DOS, \$39.95.) —Cynthia Fields and Gina Smith

■ A MODULE WITH A VIEW

In *Star Maps*, *Discover Space*'s most ambitious module, you can customize your view of the sky for any date, time, location, or lighting condition that you can imagine.

The Celestial Sphere view—the dome-shaped image looks like a planetarium's point of view—displays up to 88 constellations, as well as planets, stars, the Milky Way, and other astral objects. The animation view sets the celestial sphere in motion at prespecified rates and over pre-



With *Discover Space* you can find out what would happen if a huge asteroid moving at 25 kilometers per second slammed into Texas.

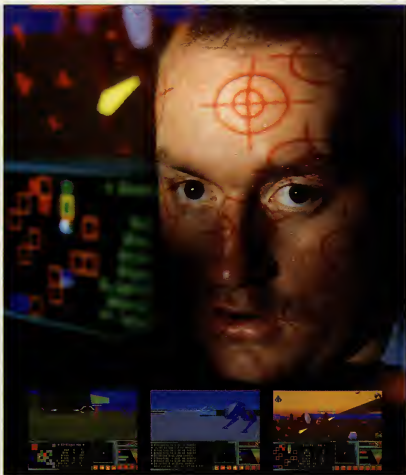
IN CYBERSTRIKE, ALL BEGINNERS WILL BE TREATED FAIRLY. AND THEN DESTROYED.

Beaten all the boxed games? Done the arcades to death? Try CyberStrike, the wild new multi-player game on GEnie where you hop into a two-legged CyberPod and battle it out against other real live humans for control of a virtual reality city. The action's fast and furious. But even if you're new in town, you won't get blown to Kingdom Come. Well, not right away at least. In fact, CyberStrike is so easy to learn, you might actually live long enough to waste someone else first. And best of all, it only costs three bucks an hour.* So strap yourself inside a Pod and come out shooting. You've got nothing to lose. Except your life.

GEnie
multi-player games

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*Here's the fine print. GEnie multi-player games and support services are \$3.00 an hour in non-prime time: 6 p.m. to 8 a.m. local time Mon.-Fri., all day Sat. and Sun. and selected holidays. There's also an \$8.95 monthly subscription fee. Each month, you'll get credit for up to four hours of non-prime time usage. Any surcharges incurred apply to all hourly usage, including your first four hours.

SIMULTRONICS
INTERNET



Spotlight

MOVIES ON CD-ROM

The Grand Opening of Your Multimedia Movie Theater

When the lights go down in the theater and the faint smell of buttered popcorn wafts your way, you know you're about to see a movie. But the experience is different when you sit down at your multimedia PC screen.

For one thing, there's only a few feature films currently available on CD-ROM. More are on the way, but most of today's CD-ROM movie-based titles consist of guides that will steer you to the flick you want to see, or dish out fun facts and behind-the-scenes gossip on the stars, directors, and movies you love.

The Beatles' 1964 classic **A Hard Day's Night** is the first full-length feature film to make it to CD-ROM format, and it offers a perfect introduction to the genre. The black-and-white movie is well made, funny, and packed with some of the freshest, most entertaining music ever recorded.

And the CD-ROM version gives you a variety of new ways to enjoy it. The disc annotates and explains the action in ways that simply watching a movie can't. For instance, you can read the script while viewing the movie—a godsend when you can't decipher the Beatles' thick accents. The Voyager Company's disc also provides surprising answers to such questions as "What did Ringo just say?" or "Why didn't director Richard Lester show all four Beatles together in that scene?" and "What other movies did Lester direct?" **A Hard Day's Night** is a

great trip back into the heady mid-sixties.

More full-length movies are heading our way on CD-ROM—including *Top Gun* and *Fatal Attraction*. While you're waiting, turn into a movie expert with the heap of film guides already on the market.

The best such guide—**Criterion Goes to the Movies**—covers only 150 movies, and reviews the interesting films Voyager has released on videodisc since 1984. Cinemaphiles know Voyager's Criterion Collection for its discriminating taste as well as for the wealth of supporting material it provides, including "director's cuts" that add commentary by directors and actors on a second audio track.



Take a CD-ROM ride back to the sixties with the 1964 Beatles classic **A Hard Day's Night**.

The Criterion Collection isn't just dusty old classics and stuffy foreign art films. It has a selection of neglected movies, too, such as *Bad Day at Black Rock* starring Spencer Tracy—the tightest American Western I've ever watched—and Cy Enfield's *Zulu*, a spectacular British movie about a South African uprising.

Criterion Goes to the Movies might be little more than a Voyager videodisc catalog, but it includes intelligent, comprehensive essays with cross-referenced credits. You can, for instance, find all the films of a particular director, complete with photos of the casts, and maybe even a QuickTime video clip or two. If you're searching for a guide to a great collection of films, get Criterion Goes to the Movies.

While Criterion Goes to the Movies



Criterion Goes to the Movies reviews films that The Voyager Company has released on videodisc since 1984.

includes intelligent films, **MovieSelect** contains an intelligent database that helps you create a list of movies you might enjoy watching.

You start by choosing a genre and a couple of films that you like. Say you pick science fiction movies and single out *Star Wars* and *Close Encounters of the Third Kind*. MovieSelect proposes *Star Trek: The Movie*. Not surprisingly, the process works best if you cooperate. If you throw MovieSelect a curve by telling it you like slasher movies and *Snow White*, you won't get much help. But if you play by the rules, MovieSelect does a good job of creating a personalized list of suggestions to take to the video store.

Cinemania '94 isn't as "smart" as MovieSelect, but it compensates with sheer volume. It boasts 19,000 capsule reviews from Leonard Maltin's *Movie and Video Guide 1994* and adds more than 4,000 more in-depth reviews from Roger Ebert's *Video Companion 1994*, Pauline Kael's *5001 Nights at the Movies*, and Baseline's *Motion Picture Guide*.

On top of the reviews, it adds nearly 4,000 biographies and filmographies of performers, directors, and other important players in the film industry. Hyper-text links and good cross-referencing let you navigate quickly through entire film careers. **Cinemania '94** improves on Microsoft's first version by including

about 20 video clips, but that's still not nearly enough.

Big isn't always better, though. **Mega Movie Guide** delivers more than 58,000 short reviews, including different reviews for the same movie. That's by far the largest collection of reviews currently available on disc, and Infobusiness supports them with a generous helping of video clips and still shots.

Unfortunately, like many bulky things, Mega Movie Guide lacks grace. The program relies on a general-purpose database browser from Folio Corporation, and it shows. Seemingly designed more for academics than entertainment, the less-than-friendly interface lets you add notes and highlight favorite sections.

Because it's not on CD-ROM, **Flicks!** lets you use your hard drive to hold quarterly updates or add your own personal picks and reviews to the 30,000-review database.

You can also list your own video collection, including when you recorded movies, last viewed them, and—for people who plan their lives in serious detail—when you next plan to view them. You can even list tapes you've loaned out and when you want them back if you get bored just

people—celebrities and just plain Joes—tell jokes in full-motion video for 80 minutes. You can watch straight through, check out one at a time, or concentrate on your favorite topics: mothers-in-law, bald men, whatever. You'll even find a dirty joke or two and a bit of gratuitous (female) nudity.

Speaking of gratuitous nudity, why was



MovieSelect gives you a personalized list of suggestions that you can take to the video store.

Raquel Welch's outfit so tight in *One Million Years BC*? If you don't remember, watch some of the most coveted footage of celebrity-sellout low points in **Midnight Movie Madness with Gilbert Gottfried**. Introduced by the screaming comedian himself and compiled by former editors of *National Lampoon*, *Midnight Movie Madness* offers up trailers for 100 of the best (worst?) American cult and drive-in movies of the fifties, sixties, and seventies. Kick back and chill out with 40 minutes of cheesy scenes from such lowbrow classics as *Plan 9 From Outer Space*, *House of Dracula*, *The Creatures Walk Among Us*, and *Teenagers from Outer Space*.

—Paul Statt



Cinemanía goes for scope, with more than 19,000 capsule and 4,000 in-depth reviews.

browsing through movies, you can test your knowledge with its trivia game. Don't expect to see any video clips—or even stills—in this one, though. If it's video you want, go rent it.

While you're at the store, ask the clerk if he's heard the one about the camel who goes into a movie theater. And if you're looking for a joke—or the punch line to that one—Time Warner Interactive Group's **Funny**, a film by Bran Ferren, has 84 of them. Eighty-four different



Midnight Movie Madness offers trailers for 100 of the best (worst?) American cult movies.

More About the Movies

A Hard Day's Night
The Voyager Company
800-446-2001
Win/Mac, \$39.95

Criterion Goes to the Movies
The Voyager Company
800-446-2001
Win/Mac, \$24.95

MovieSelect
Paramount Interactive
415-812-8200
Win/Mac, \$24.95

Cinemanía '94
Microsoft Corporation
800-426-9400
Win, \$79.95

Mega Movie Guide
Infobusiness
800-657-5300
Win/DOS, \$59.95

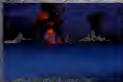
Flicks!
Villa Crespo Software
800-521-3963
DOS (floppy only), \$59.95

Funny
Time Warner Interactive Group
800-482-3766
Win/Mac, \$39.99

Midnight Movie Madness with Gilbert Gottfried
Medio Multimedia
800-788-3966
Win, \$59.95

Ever wonder what it's like to have your life flash before your ears?

You'll find out when you play SSN-21 SeaWolf, the sequel to 0888 Attack Sub. And the most realistic PC



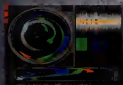
submarine simulation this side of Annapolis.

As you slipper the world's newest, most heavily armed nuclear attack sub, no less than 100 different sound effects assault your senses via our revolutionary 16-bit full digital stereo sound.



NOBODY KNOWS WHAT HE'S GIVE YOU A PRETTY GOOD

You'll hear the eerie high-pitched whine of torpedoes as they home



on their targets. The menacing drone of a destroyer passing overhead.





And damage reports from
the mouths of crewmen
praying they'll live to enjoy
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Of course, it pays to



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SSN-21 SeaWolf™ features
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of fresh air and dive into a
world where good hearing is
your greatest asset.

ALL LOOKS LIKE. BUT WE'LL
D IDEA HOW IT SOUNDS.



Sure, it'll test your
nerves. But what were you
expecting, the Love Boat?





Kids Corner



At key points in the story, *Peter Pan* takes a break and asks kids to help out by choosing one of the four Paintbox Pals.



Kids can't miss, since *Peter Pan* puts a circle of stars in the spot where they should apply the Paintbox Pal. Here, Jazz Painter goes to work on the croc.

STORY PAINTING WITH PETER PAN

Never Grow Up

You can fly! You can fly! You can fly!"

Mary Martin sang it on Broadway. Sandy Duncan did, too. And now your kids can scream it out when they take a break from *Peter Pan: A Story Painting Adventure*, a new, slightly interactive game for the PC and Macintosh, and coming soon for 3DO.

Primarily a passive play, this EA*Kids program takes an unusual approach to the famous story. Unlike the titles in Brøderbund's Living Books series, *Peter Pan* doesn't include gobs of onscreen objects to click on. Instead, children ages seven and up use a simple set of paintbox tools to help Peter move through the adventure. It sounds weird. But it works.

■ THE RIGHT TOOL

Peter's got a treasure map and Hook wants it. In fact, the one-armed pirate will do anything—from kidnapping Wendy to stowing some of the Lost Boys in caves—to retrieve it.

When things get tough, *Peter Pan* takes a break and asks for help from the kids playing the game. But rather than hack and slash with a sword, kids use a paint box filled with four animated characters. Winston Whoosh rubs out danger with his cute eraser head; Sally Sprayer squirts magic mist; Jazz Painter dabs colors; Nick Lead connects the dots.

The characters face the screen only when they can help, so kids know exactly what choices they have. Once a tool hits the screen, animated stars encircle the appropriate area, indicating just where to spray, paint, erase, or draw. It's foolproof.

■ PAN WINS AGAIN

Unlike an adventure game, where plot line branching depends on the choices

the player makes, Pan forges towards its foregone conclusion no matter what kids do in the interactive scenes. And Pan always wins.

That makes the game less frustrating for younger kids who aren't ready for problem solving, but it also shortens the game's life span. Kids will play more than once just to try all the tools and gags, but the title lacks replay value for all but the most repetition-obsessed preschoolers.

With that audience in mind, I recommend the compact-disc version. Unlike the hard-disk Pan, where limited narration demands reading skills, the CD offers narration from start to finish, allowing nonreaders to follow the story and operate the Paintbox Pals on their own.

All versions have sound effects and a bouncy blues score. They also feature credible animation, even on a 386SX PC, though it's smoother on faster machines.



Several of the scenes in *Peter Pan* are cinematic and include narration.

Peter Pan is only the first title in the EA*Kids Paintbox Pals series and, as such, is an impressive debut. Not quite an adventure, but definitely much more than a sit-back-and-watch slide show, it's the most original kids' game to swoop down since Brøderbund launched Living Books. (Electronic Arts; 800-245-4525; Win/Mac and CD for Win/Mac, \$49.95.)

—Gregg Keizer

A Head Start for Tomorrow's Architects

CAD for kids sounds like either a complicated product designed for nerdy junior engineers or a juvenile cut, paste, and color program trying to appear sophisticated. But **Kid CAD** is a clever, computer-aided design program that lets any reasonably intelligent kid older than seven design 3-D buildings, interiors, and landscapes.

First, new designers pick a location: city, town, or country. Then they can start from scratch with a house frame or choose

to customize a predesigned structure.

Kids can add everything from major structural details to nooks and crannies, and they can use a variety of colors and materials including brick, stone, steel, rubber, thatch, and wood. They can rotate their creations, zoom in on them, look through exterior walls to work on the interior, and move objects at will.

But Kid CAD is not for every kid. Although it has a fairly simple Windows interface, it can be difficult at times. Just



In Kid CAD, kids have the tools to build everything from major structural details to nooks and crannies.

One day they ran into each other on the road. The Hare couldn't understand how the slow-moving Tortoise could accomplish anything.



The Tortoise and the Hare on CD-ROM

For lots of kids, the classic story of **The Tortoise and the Hare** is their first lesson in perseverance. And the CD-ROM version of the venerable fable makes its point with humorous narration, funny animation, and cute music and sound effects.

Like the other titles in Braderbund's Living Book series, **The Tortoise and the Hare** lets kids interact with the story. They can follow along with the highlighted words and click on virtually any character or object to see animations.

Braderbund has beefed up the two-character original with lots more personalities to make kids laugh, including animated trees, houses, and even rocks and mailboxes. The soundtrack's mix of jazz, blues, and bluegrass is clever, too. One musical highlight occurs during a jam session on the second page, when a talented beaver raps some quick doggerel.

Fun, educational, colorful, and well paced, **The Tortoise and the Hare** is targeted at children aged three to eight. While older kids can enjoy it on their own, preschoolers will need a little help from their parents. (Braderbund Software; 415-382-4400; CD for Win/Mac, \$39.95.)

—Sarah Tilton



Kids get to decide whether to build their house in a city, in a town, or out in the country.

like real architects, kids have to be meticulous with almost every piece they add to a building, not only carefully placing it but sometimes also rotating it. Often, several menu choices are needed just to get one element into the correct place. The process takes time, patience, and practice. Don't expect a computerized box of Legos.

Worse, kids must build their structures piece by piece, and the larger the structure, the more pieces—and time—it takes. The screen redraws every time the program adds a new element, and the more complex the design, the slower the redraw. A fast 486 will help keep impatient youngsters from getting frustrated.

But for older kids that have patience

and fast hardware, **Kid CAD** can be creative, rewarding fun. (Davidson & Associates; 800-545-7677; Win, \$49.95.)

—Mark Reynolds





Tube Man

Keith Ferrell

New Tube, Old Tricks

It's a killing field, that zone in front of the television screen—a deadly potato field now being seeded with this year's magic crop: interactivity.

What will they think of next?

Anything they want to. They (that marvelous bin of a word; you know who *they* are, we all know who *they* are) have finally figured it out. After half a century of career-ing down a one-way electronic road that leads to the tube and from there to what's left of your brain, they're broadening the highway. And what an autobahn it will be!

Direct broadcast, satellite signal bounce, twisted pair, coax, fiber, big dish/small dish, onscreen menuing, pay-per-view, programming on demand, networks, studios, cable companies, phone companies, converter boxes, PCs, game decks, high-definition screens, all connected and all humming a tune as close to the speed of light as they can manage, and getting faster all the time. It's quite simply the best and fastest highway ever built, way beyond cool.

And what's going to move down that highway?

First generation: This year. Reruns, retreads, remakes—and all the Elvis memorabilia and psychic advice your credit cards can handle. Maybe even some entertainment.

Second generation: Two to four years. All of the above plus games that will seem interactive to people who don't know from interactive games.

Third generation and beyond: Next century. The hope is for a highway that will bear any traffic we want it to, with no interest group so special or so small it can't have its own rich lane. The risk—and, far too probably, the reality—is bigger and better reruns, retreads, remakes, and retailing.

A quarter century or so ago Harlan Ellison began working on what became the best

column of TV criticism ever written. He called it "The Glass Teat." That was Harlan's vision: the audience were suckling babies fastened to the new electronic nipple. Everything he had to say about TV held true until very recently.

Now, though, I'm not so sure his insight still applies. Because we're on the brink of no longer suckling from the glass teat. Instead, it's going to be suckling from us. Specifically our wallets, which is what the ubiquitous "they" most want to interact with anyway.

I do it, you do it, we all do it. And they do it better than anyone. Commerce, commercialism. The mercantile trade. The old buy-and-sell.

Business.

That's what TV is, a business. Publishing too, for that matter, or writing. And TV is as big a business machine as has ever been built, even as it rests on the verge of getting much bigger.

In that sense, the TV has always suckled from us, whether it was Bucky Beaver brusha-brusha-brusha-ing the Howdy Doody generation into haranguing their moms for Ipana toothpaste or your local cable panderer putting on a monthly gouge that would do proud any barbarian at any gate.

The difference, from here on out, is that the exchange will bear a gathering load of what passes for interactivity. You'll be able to push buttons and massage controls and make things happen. And each touch

you put on the controls is going to put a touch of its own on your pocket. Talk about Magic Fingers!

There's a certain amount of interactivity at work already, of course, and it may well be that remote-control channel surfing is about as interactive as whole chunks of the couch potato fields are willing to become. Give them a chance to surf more specific waves—"Which 'Gilligan' do you want to see tonight, hon?"—and you may redefine potatohood. Charge a price per rerun that won't scare away the mark when the first bill comes, and you've got a good shot at turning

the first generation of interactive television into a perpetual money machine tilling the baby-boomer soil of the first generation to grow up with TV.

Later, more media-savvy generations will be both easier and harder to tap. Easier because they've spent their lives surfing. Born watching, they were born to be gotten. Or had. Harder because their attention span is so diminished by constant surfing that it's tough to get them to sit still.

But it doesn't have to be that way. Interactivity can be as

much about what things can become as what you can charge. That's what I hope to cover in this column: what TV can become, rather than just an interactive version of what it is right now.

Stay tuned.



Keith Ferrell is the editor of *Omni* magazine, editorial director for Compute and science editor for *Penthouse*, each of which covers the interactive revolution in its own way.

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Game On

Rusel DeMaria

The First Time

Do you remember your first time? Most people do. My first time was on the Stanford University campus in the summer of 1967. In the student union. On Space War. My first interactive electronic game.

You thought I was talking about sex? Sorry. I don't write about sex. I write about games.

Space War was a vector-graphic, stand-alone arcade-style game. At the time, only three of them existed—at the University of Utah, MIT, and, of course, Stanford. The beast ran on a big DEC minicomputer, but I couldn't have cared less.

In today's vernacular, you might call it a "two-player interactive space-warfare simulator"—a sort of primitive, head-to-head version of X-Wing. We didn't have a way to describe it at the time, so we just called it "cool." Its closest analogue was a pinball game, but this was no pinball game. On a slow day, people lined up ten-deep in the student union just to watch.

Now, I'd like to tell you that I saw Space War and, like Nolan Bushnell, I saw the future: people plunking quarters by the billions into little cabinets so they could jerk joysticks and bash buttons by the ghostly glare of a flickering screen. But a predictor of the future I was not. A consumer of that future? You bet I was.

After Space War, I hit a big dry period, which lasted until Bushnell and company put Pong on the market in 1972. But by the time the Atari 2600 came out a few years later, I was hooked again. Ask anyone who knows me. I play games for a living. I've spent the last two decades watching pixels dance.

Of course, games have changed dramatically since 1981, back when uncannily absorbing games like Lode Runner flashed their

crude graphics across my kludgy Apple II. These days, progressive entries such as The 7th Guest and Myst blend full-motion video, 3-D-rendered graphics, and stereo sound. But today's games aren't necessarily more fun, though they're certainly louder and brighter. There's got to be more to the future than just better and better graphics and sound.

At least that's what Strauss Zelnick seems to think. Now here is a guy who recently dumped a cushy, high-flying career as the president and CEO

of 20th Century Fox to go slumming in Silicon Valley at a tiny 3DO software maker called Crystal Dynamics.

Why? Because, he says, the distinctions between games, education, and traditional forms of entertainment (movies, for example) are blurring into something that is altogether new. He sees something in the future that's not in the movies, and not in any game on the market, either. "Everyone agrees there's a creative interactive product that's more than a video game, but probably not an interactive movie or television show," he told me. "That's what we're looking to create."

Doing so isn't going to be easy, at least not at first. "You'll see lots of visuals and sound, but not much content. Short-term results will be shallow but splashy products," predicts Gilman Louie, chairman of


California-based game maker Spectrum HoloByte. Louie's company is also working with Paramount on rides revolving around the theme of "Star Trek: The Next Generation." Louie says that game makers "need to learn how to utilize the skills of other media" to create high-quality interactive products.

Change is coming from another direction as well, Louie warns: "They're looking at our business, too. The movie business is waking up big time."

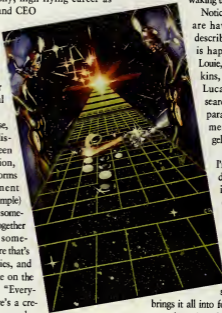
Notice that both people are having a hard time describing exactly what is happening. Zelnick, Louie, 3DO's Trip Hawkins, and even George Lucas are frantically searching for the new paradigm in entertainment. It just hasn't gelled yet.

I'm looking too. I'm looking for new directions in gaming and interactive entertainment in general. I'm looking for some insight into what works and what doesn't. And I'm looking for the special project that

brings it all into focus. The one that stuns me to the point where all I can say is "cool." Or maybe "killer."

As I prowling the back pixels of this industry, I'll share my discoveries and observations with you. So stick around, and game on. 

Rusel DeMaria is E2's games editor and the author of more than 25 computer and video game strategy books. He and his dancing pixels reside in northern California.



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Party Girl

Hopping the Fence

What do you do when Microsoft CEO **Bill Gates** shows up at the premier party of the year, and—oh, oversight of oversights!—you're not invited? Well, if you're the average Joe, you stay at home and lick your wounds. But if you're a party girl genius on a mission, you hop the fence and crash.

A party girl does what she has to do, after all. And boy, was this crash ever worth it. Good thing I brought a hat, shades, and a hot dark wig. Turned out it was a costume party, and all the Silicon Valley digerati were disguised to kill. The Bill Boy himself arrived as Jay Gatsby. (Something is wrong here. I know Robert Redford—and you, Mr. Bill, are no Robert Redford.)

But I didn't tell Bill that, I was too busy eavesdropping on a conversation he was having with two other guests over the future of the Apple Newton and 3DO. One guy claimed that these two devices were the most revolutionary gizmos to come down the pike in ages. "Ha!" said the other. "The Newton is the 3DO of PDAs!" But our Bill, who we know from experience never wastes a chance to unleash a good one at Apple, said absolutely nothing.

So is it true Microsoft is trying to worm its way into the Nintendo-Silicon Graphics plan to build an even whizzier set-top game box next year? Nothing in this crazy industry surprises me anymore. And if the rumor about Microsoft making a cash bid for Nintendo of America is true, well, you won't see me batting an eyelash.

People are always saying things in front of me because they think I'm a dumb blonde who won't understand. My tactic worked especially well recently, after a Penn & Teller show in New York.

Penn was bragging about a new multimedia CD he's planning, something about magic and—I know it's hard to stomach—sex. I saw him flash a poor young reporter once after one of his magic shows (I swear this is true), and believe you me, it was an awful sight. Shows to go you that money and fame can't buy good taste, but if you've ever caught Penn's act, you already know that.

On the other hand, Jordan Mechner—the boyish genius who masterminded my favorite addiction, *Prince of Persia*—is a real prince of a guy. At a party in his offices in San Francisco's slightly hip North Beach district, Mechner was talking all about his plans to create an ambitious new game using 3-D-rendered graphics, animation, live actors, and real Hollywood sets.

Mechner's new company, Smoking Car Productions, is already working on the project, which Mechner describes as "a Hitchcockian adventure combining romance, intrigue, suspense, everything." Unlike the so-called interactive movies coming out on CD right now, this will be a real game, Mechner says. Christmas 1995 is the due date, and he's already in negotiations with a bunch of slick Hollywood types. Seems Silicon Valley is invading Hollywood at a breakneck pace.

But it's also working the other way around, as I discovered when I hopped the next morning's shuttle to LA-LA Land to see what all this Hollywood hooplah is really about. And right there in Burbank I found ... David Hasselhoff!

My bosomy buddies on the Street of Broken Dreams whisper that the stars of the TV show "BayWatch" (okay, make that "BabeWatch"), those beef-cakey, cheese-cakey SoCal lifeguards, will soon be making their fleshy debut on CD-ROM. It's too soon to tell whether this will be a game, an interactive TV show, or a little of both, but my sources say it'll be real steamy.

But how good this stuff will be is anyone's guess. It's hard to imagine how you'll interact with a CD-ROM-based TV show. The successful ones will probably give you a beginning, middle, and an end, and still let you

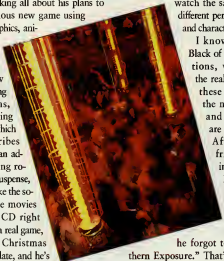
watch the same story from different perspectives of time and character. Bet me.

I know a guy, Peter Black of Xiphias Productions, who says that the real competition to these things will be the movies, dramas, and sitcoms that are playing on TV.

After loaning a friend his new interactive CD-ROM movie—*Soft Kill*—the guy got so interested in playing it that

he forgot to watch "Northern Exposure." That's impressive. If this stuff is enough to lure people away from Tube Numero Uno, this new market definitely stands a chance.

Makes me wish I'd majored in broadcasting or marketing, instead of computer science and oenophlogy. There's a lot happening in the entertainment business right now, not to mention a slew of wild parties. And I'll be there, digging up the hottest news. Look for me near the bar.



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Gets
Bad.

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Sweaty

Today's new virtual-reality parlors





Palms

deliver the interactive ride of your life

WANT TO PLAY SOMEWHERE THAT DOESN'T EXIST? The first generation of commercial virtual reality lets you do just that.

A combination of video game, amusement park ride, and high-tech computer simulation, today's new virtual-reality attractions use high-performance computing equipment that was until recently beyond the grasp of anyone but research labs and top-secret military training centers. Equipped with awesome processing power, ambitious game designers are creating multiuser interactive experiences that blur the lines between games, rides, and movies. And they're cropping up all over the country.

Some of these genre-bending attractions, such as Virtual World, link several advanced arcade-style machines to the same virtual space. Players sit in cockpits crammed with detailed controls and enveloped by computer-generated sights and sounds. Others, such as Virtuality, are based on the 3-D headgear most commonly associated with virtual reality. The games are basic, but simply turning your head reveals an all-encompassing and intriguing virtual world of polygons and primary colors. Still other systems, such as Galaxian² and Sega's AS-1, take players for a real ride. The AS-1 uses hydraulics to shake, rattle, and roll players into a new-age interactive movie, while Galaxian² relies on crisp graphics and precise fire control.

The approaches are different, but the goal is the same: to create a new world in which players can interact with each other and the game. In many cases, the dynamics of group interaction contribute as much to the experience as the virtual-reality elements do.

Expensive to build, many of the new virtual-reality attractions are set up to reuse the same hardware with different programs to create new games and experiences, much like a movie theater can show any number of movies. That will help ensure a steady supply of new worlds to explore and new battles to fight.

The virtual-reality concept is still in its infancy, and even more advanced attractions are opening all the time. But you don't have to wait. There's a lot of excitement out there: Just show up and take a spin.

By Ben Calica

BattleTech



The cockpit



BattleTech Mechs



The lounge at Virtual World

I'm under attack!
I hit reverse and slam
the throttle into full.
It's an old trick,
but it still works.

...No light but the black glow of the primary view screen. I take a deep breath, and my hands automatically reach for the comforting feel of the gun sight control and throttle. I've got about five seconds to assign my Long Range Missile packs and other long-distance weapons to the right thumb button. The left button is for medium-range weapons. The short-range stuff goes to the main trigger, but fighting up close isn't my style. I like to hang back and pick off the wounded from a distance.

The lights blaze on! The launch doors appear on my primary screen. No time to check the radar screen below. My fingers race down the rows of LEDs listing each weapon, stabbing at the trigger-assignment buttons. Set! The screen flashes, and I hear a blast! I'm under attack! I hit reverse and slam the throttle into full. It's an old trick, but it still works. My assailant appears in front of me. I target the left arm of the huge robotic Mech and squeeze the fire trigger. My short-range lasers and 50mm auto-cannon blow eruptions of flame from his arm. I follow with the right button to send another massive blast.

The Mech, code-named Sissy, trains another shot at me. I wheel left and turn my torso to continue my attack. I'm slammed by fire again and glance down at my radar. Two more Mechs have crept up behind me. Prudence whispers, "Get the hell out of there," but revenge has other ideas. I ignore the blasts at my well-armored back and carefully line up the cross hairs on Sissy's wounded arm. I exhale slowly as I squeeze the trigger. Flames erupt again and when the smoke clears, the arm is conspicuously absent. Hah! Cap'n rides again.

EMERGING from the cockpit buzzing from yet another round of BattleTech, an all-out war between eight robots, I head to the Jules Verne-style lounge of Virtual World for a cool drink, a blow-by-blow printout of the battle, and a high-speed re-creation of my game showing on a nearby monitor. Based in Walnut Creek, a sleepy suburb of San Francisco, Virtual World is the model for Virtual World Entertainment's international franchise operation. Another center is scheduled for San Diego, and additional centers are planned for 1994 in Los Angeles, San Francisco, New York, Hong Kong, Toronto, and Tel Aviv. The company even intends to install communications links so that teams from each center can challenge one another.

If the whole enterprise seems Disneyesque, it's no accident. A group of investors led by Walt's nephew Tim Disney adapted Virtual World from the original BattleTech

Center that opened in Chicago in 1990. That 16-unit center and similar ones in Tokyo and Kyoto have a gritty feel designed to appeal to hard-core gamers. The Virtual World I just experienced—with 24 pods configured in banks of eight—has a more soothing, adult atmosphere, complete with a restaurant and a full bar featuring smart drinks and custom-brewed "Martian Ale."

"The center has the level of detail that you would expect from a Disney attraction," boasts Virtual World spokesperson Laurie Dittrich, known around here as "Trillian." At \$7 to \$9 for each 10-minute game, prices are Disneyesque, too.

To justify the premium price, Virtual World carefully manages both the experience and the atmosphere. Once you buy a ticket and choose a permanent "handle," a staffer leads you back to the mission briefing area. An orientation leader plays a training video and answers questions while

the technicians configure the pods for your mission. They then lead you to the pod—basically an enclosed leather seat configured to look like a cockpit. You stare at more buttons than you know



what to do with. But don't worry, you don't need to use all of them.

While BattleTech is the mainstay of Virtual World, the pods also can be configured for other games, including Red Planet, a racing game set in the mining colonies of Mars. Another game under development is reported to be an underwater rescue mission set in the lost continent of Atlantis.

So far, though, the other games can't measure up to BattleTech's richness and complexity. For example, each BattleTech weapon generates a specific amount of heat, and advanced games will shut down your Mech if it runs too hot. A variety of terrains and atmospheric conditions add to the challenge. BattleTech is major fun to play, with new wrinkles every time you think you've got it down cold.

Beginners may take a couple of games to become competitive, but playing with a group adds immediate spice to the experience. The depth of the game has even bred regulars. "We're like [the cast of] 'Cheers,'" explains one top gun with the handle "Kanaka": "Wizard Rex is Norm, and Cobra Prime is Frasier." True to his beer-drinking namesake, the fortyish and slightly heavyset Wizard Rex shows up almost every day. His cane and slight limp don't stop him from being a terror in the cockpit.

Virtual World

24 pods
1375 N. Main Street
Walnut Creek, CA 94596
510-988-0700

PRICE: \$7-\$9, depending on day and time
Another operation is due in San Diego.

BattleTech Center

16 pods
North Pier Festival Market
435 E. Illinois St.
Chicago, IL 60611
312-836-5977
PRICE: \$7-\$9, depending on day and time

BattleTech Warrior Wisdom

Ready to rock 'n' roll? Here are some tips from BattleTech veterans to help you avoid rookie mistakes:

✱ The unlabeled rocker switches above the main screen enable advanced functions. The first switch lets you steer your Mech with the foot pedals. The second switch lets your Mech's torso move independently of the direction you're traveling. With practice, you'll be able to shoot at an opponent while moving out of his line of fire. You can also stand still and whip your torso around while firing to create the "Circle of Death."

✱ Choose a Mech that matches your fighting style. If you want point totals, go for the unlisted but heavily missile-laden Vulture V4. If you want kills, go with the Loki

Prime or Thor V6. If you are playing in a team, try to match up a good short-range fighter with a good long-range blester like the Vulture V5, affectionately known as the Turtle for reasons that will quickly become obvious. And while the people at Virtual World will tell you that there are no bad Mechs, veteran players advise you to stay away from the Madcats, except the V3, and to avoid the Thor V5 altogether.

✱ If someone is chasing you, duck behind a third player to get him off your trail.

✱ Don't always go for the kill. If you can take out your opponent's arms and one leg, you can leave him helpless and unable to come back in the game with a fresh Mech. Besides, a kill is worth just 250 points. You

can rack up more than 900 points by picking your victim apart piece by piece.

✱ Watch for when opponents get hot, or right after they fire a massive volley. They're vulnerable in the down time.

✱ Target missile packs when they fire at you. If you can hit them midshot, you may be able to explode the ammo inside.

✱ Missiles are powerful but tend to spread their damage around. If you want to score a kill, target the black areas with shorter-range weapons.

✱ Don't fire all your missiles at once especially in advanced games with heat sensing enabled. Your Mech will overheat, shut down, and blow up.

-B.C.



Sega AS-1

As we strap ourselves into our seats, the door closes and the ship's 6-foot screen comes to life. The entire eight-person crew groans with disappointment as we realize our captain is *Michael Jackson*.

Nevertheless, we're ready to work together to launch our shuttle. Each crew member has a set of control buttons we have to press exactly when the timer hits zero. The timer reaches the magic mark, and I punch my trigger. "Engine 1, fire. Engine 2, fire. Engine 3, miss!" Miss! That was me. Michael is screaming and everyone is looking at me.

The ship dives out of the launching chute and plummets to the ground. The engines kick in at the last minute and we pull up and blast through a billboard on our way to the orbital training area. The battle quickly turns real, and our triggers fire auto-tracking missiles at the swarming enemies. This time my trigger finger is true, and I end up with the high score.

My prowess earns me the right to land the shuttle, but using the buttons to keep the ship on course proves too much for me. We slam through the glass wall of a building, sending tables and chairs flying as we slide to a stop. After a final chastisement from Michael, the door opens, and we step back out into the real world.

The battle quickly turns real, and our triggers fire auto-tracking missiles at the swarming enemies.

THE SEGA AS-1 is a multiperson flight simulator that uses hydraulic lifts to tilt the capsule in synchronization to a prerecorded movie. The combination delivers a feeling of zooming through space. And by adding group gaming elements, participants feel like pilots, not just passengers.

Each seat has a set of handles with two buttons. There's no aiming or steering, but just launching your guided missiles is enough to remind you that you're not just along for the ride. It's great fun the first time, but since the AS-1 doesn't really vary the experience, the 6-to-8 minute trip loses its excitement on repeat visits.

Despite its impressive technology, the unique group dynamic may be the AS-1's most interesting feature. A single person can end up with responsibility for an entire group of strangers. It's a strange feeling, and talk about peer pressure!

Sega AS-1

Sega VirtualLand
Luxor Las Vegas
3900 Las Vegas Blvd. South
Las Vegas, NV 89119
800-288-1000

PRICE: \$2-\$4

Air Combat U.S.A.

The blood drains from my face and the horizon spins wildly as I pull the stick back and hard to the right. "Hollywood," my copilot, screams at me to keep my prey in view as our

plane turns and rolls in hot pursuit. My turn is light and fast as I fight through the g-forces to stay on his tail. As we come out of the turn I can see my target right where I want him, a sit-

ting duck. I line up the cross hairs in my gun-sight as the plane's electronic tracking system beeps that the target is in range. I squeeze the trigger on the stick and enjoy the satisfying plume of white smoke speaking from the belly of my victim's fighter.

I level off and prepare to begin a new dog-fight high above the northern California clouds. Only then do I realize that my mouth is dry and my flight suit is soaked with sweat. This is no flight simulator, this is real!

At least the flying part is real, in actual Marchetti SF 260 training planes. The shooting part is simulated electronically, and the smoke is only for effect, not the mark of a ruptured fuel line or a ruined engine.

Since 1968, Air Combat U.S.A. has let thousands of people who've never even sat in a small plane fly their own 270-mph dogfights in high-performance military trainers.

Virtuality

The headset feels heavy and slightly uncomfortable at first. But I quickly lose myself in the stereo sounds and 3-D sights of my new world. I turn my head to examine the game space.

I've been dropped onto one of four checkerboard floors hanging about 15 feet above a central battle area. I move my hand and see my digital arm holding a giant popgun that lobs a lemon-sized projectile about eight feet. I look around and see three color-coded polygonal humanoids heading down the stairs towards the central floor. I point in the direction I want to go, and my digital avatar heads into the game.

One opponent is quickly blown into digital shatters by the guy to his right. As in a game of digital tag, the loser just appears again in a different section of the war zone. Dops, one of them has spotted me. As he fires, I duck and my digital character ducks with me. Cool.

I start to blast away, missing more often than connecting. Unfortunately, my indiscriminate shooting teaches me an unpleasant lesson. Whoever shoots the most attracts the attention of a giant pterodactyl. The terrifying beast snatches me up in his talons and carries me into air. At what looks to be about 100 feet up, the prehistoric bird lets go and I plummet, to be dashed to virtual pieces on the floor below. I won't learn until later that if you stand your ground as he swoops down on you, a carefully aimed shot at the last second can save you from certain doom.

DACTYL NIGHTMARE is the most popular of the six games available for Virtuality, the first real arcade-style use of headset virtual reality. Developed by Britain's Virtuality Entertainment Systems, the game comes in two kinds of setups. The more interesting 1000CS CyberSpace stand-up model places you inside a small circular rail. The more sedate 1000SD SitDown version is easier and less disorienting. Both have the look of arcade games, right down to the coin slots.

All six virtuality games are designed to work in four-player interactive mode, and most locations have an attendant who will help you select which game you or your group wants to play. The attendant also helps you adjust the headsets for proper operation.

No matter which game you choose, just moving around in Virtuality is plenty of fun. The first few times you try it, the main challenge is just to figure out the system. After that, you can start paying more attention to the actual game. In addition to Dactyl Nightmare, which Virtuality spokesperson Chris Yewdall calls "the Pong of the VR world," the stand-up version of Virtuality runs Legend Quest, a medieval adventure, and Grid Busters, a futuristic gladiator scenario. Legend Quest works either as a single-session challenge or a 5-hour-long continuing quest that remembers where you left off. Grid Busters is a hyped-up version of Dactyl Nightmare, with players zooming around with jet packs and head-mounted weaponry.



Virtuality 1000CS

Whoever shoots
the most attracts
the deadly attention
of a prehistoric
'dactyl.

Each pair of would-be aces begins the 3-hour program on the ground with a combat tactics briefing. After the instructors get the planes off the ground, they hand over control to the players for formation flying to the battle zone. Once at the target site, you get a few minutes of practice and six brief dogfights, complete with rolls, loops, and as much adrenaline as you can handle.

Each fight lasts anywhere from 1 to 5 minutes. A patented two-way columnized-light tracking system lets you know when you

score a kill, and your plane beeps and billows smoke into the cockpit to tell you when you're the loser. Air Combat instructors can even vary the microwave-band system's sensitivity to make things easier for novice gunners.

Then it's back to base for a debriefing, complete with synchronized video tapes that make it clear when you were top dog and when you were dogmeat. At almost \$700 for about an hour of flying time, Air Combat U.S.A. is expensive, but it's by far the closest most people will ever get to being a real fighter pilot.

—FREDRIC PAUL

Air Combat U.S.A.
Fullerton Airport
230 N. Dele Pl.
Fullerton, CA 92633
800-622-7590

At various times, flights are also available from a number of other airports across the country.
Price: \$695





The sit-down pods run the jump-jet simulator VTOL, a BattleTech-like game called Exorex, and Flying Aces, a new WWI flight simulator complete with digital advice from your choice of an American, English, French, or Italian copilot.

All of the simpler Virtuality games are terrific. It's a blast just getting a chance to play with real working VR gear. But stay away from the more complicated scenarios until you

get the hang of things. And bring a friend or two. Virtuality is much more fun in groups.

Virtuality

Virtuality Entertainment Systems
501 N. Broadway, 4th Floor
St. Louis, MO 63102

800-ILLUSION

Located in arcades, bars, and virtual-reality centers in San Francisco, Los Angeles, CA; Boulder, Denver, CO; Navarre, St. Petersburg, FL; Marietta, GA; Chicago, IL; Grand Rapids, MI; Bloomington, MN; Branson, Crestwood, St. Louis, MO; Cary, NC; Voorhees, NJ; New York, NY; Cincinnati, OH; Dallas, Houston, Killeen, TX; Salt Lake City, UT; Virginia Beach, VA; Milwaukee, WI; Kirkland, WA.

PRICE: Typically around \$1 per minute

Galaxian³

Six of us step out of the arcade into the small theater. As the blackout curtains pull closed behind us, we grab onto the twin handles that target our cannons and wait for the battle to begin. Each gunner controls a different colored cross hair, but as the first swarms of highly rendered space fighters descend on us like bees protecting a hive, we soon find it tough to tell who's shooting what. We fight off wave after wave of fighters before our unseen captain decides to take us in to attack the engine of the mother craft. After a harrowing run down the length of the mother ship, the whole team cooperates to take out the rotating target with concentrated fire.

A HYBRID of theater and arcade, Namco's Galaxian³ resembles Sega's A5-1 in that it also casts players as the crew of a ship they do not pilot. While Galaxian³ lacks Sega's motion enhancements, it gives each player an individually aimable gun turret and delivers incredibly detailed graphics. Accompanied by four-channel multispeaker sound, twin projection systems splash high-resolution computer images onto two huge 110-inch screens. A pair of LaserDisc players generate the background

images, while the system adds the interactive elements for the gunnery cross hairs just before projecting the image.

Each intense 6-minute game runs a roughly similar pattern. First, you fight off several mass attacks from enemy fighters. Then you execute a *Star Wars*-style assault on the bad guys' mother ship. Finally, you skim across the surface of an alien planet to penetrate the alien fortress and destroy the enemy's primary power supply and save the world.

Cooperation is key to overall success, but each gunner acts independently and the best scorer of each round is declared the winner.

Galaxian³

Namco-America
P.O. Box 641630
San Jose, CA 95164
408-383-3900

Unit located at CyberStation, Pier 39, San Francisco, CA
415-399-9907

PRICE: \$3

After a harrowing
run at the mother ship,
the whole team
takes out the rotating
target with
concentrated fire.



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The Future

TODAY'S virtual-reality games offer a big improvement over anything available in arcades or on home computers, but they're only the first generation of a rapidly evolving new medium. New systems on the way will involve licensing popular movies such as *RoboCop* and boosting the number of people who can play at one time.

Spectrum HoloByte, Edison Brothers, and Paramount are working on a mall experience based on *Star Trek: The Next Generation* but won't say much about their plans. Observers say it's going to be hot.

According to one insider, the game will include set elements from the *Enterprise's* bridge and transporter room, as well as the bridge of a Klingon battleship. One possible scenario has players entering via a holodeck. Once players make it through the door, uniformed *Star Fleet* crew members will ask, "How did you like your simulation of 20th-century mall life?"

But the project may take a while. One potential holdup could be political infighting between the Paramount Interactive computer division that's handling this project and the theme-park group that's been incorporating *Star Trek* stuff in the company's recently acquired Great America amusement parks.

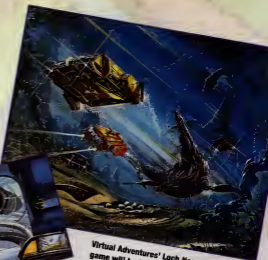
A project called *Virtual Adventures* could be even better. This deal teams theme-park veterans Iwerks with the computer graphics wizards at Evans & Sutherland Computer Corporation. According to Mark Young, senior vice president of sales and marketing for Iwerks, "This will be the first high-capacity, fully interactive 3-D adventure."

Four pods holding eight people each will explore the same world. The first scenario will be a rescue mission to save the eggs of the Loch Ness monster from poachers and other evildoers. "The object is to save the species of the Loch Ness monster," says Young. "We didn't want to go into [overly violent] scenarios."

Each pod will have one pilot, one navigator, two periscope operators, two claw operators and two so-called "goopers." "The goop is a green substance that immobilizes the target," Young says. Because the game is

totally interactive, the experience—and the Thomas Dolby score—will change each time you play. Young says that over the next few years, the venture plans to build multiple units and release multiple games to run on the equipment.

This blending of 3-D virtual realities with motion simulation is the clear trend in



Virtual Adventures' Loch Ness monster game will be fully interactive and give each player a different role.



commercial VR attractions. And since the environments are so expensive to create, you're likely to see more and more approaches that add new software to existing hardware to create new adventures. Eventually these interactive virtual-reality theaters will change experiences as often as traditional movie theaters change films. 🍷

Ben Calica is director of production for CyberFlix, an interactive movie company in Knoxville, Tennessee.



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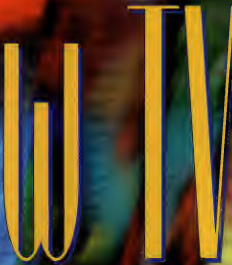
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Circle 131 on Reader Service Card

Brave New





WTV

Tune in to 500 Channels Of Interactive Television


WHEN SAN FRANCISCO 49ERS quarterback Steve Young calls a play in the huddle, Eric Reinwald is right there with him, mapping out the team's offensive strategy. But this 28-year-old customer service representative isn't crouched on the grass in Candlestick Park. He's perched in front of his TV in Castro Valley, punching in his play calls on a compact handheld computer.

Reinwald, along with thousands of other armchair quarterbacks, is part of the Interactive Network, an entertainment system that lets viewers play along with game shows, dramas, and, of course, professional sports.

In cities and towns across the country—from Castro Valley, California, to Orlando, Florida—people are turning on, tuning in, and playing along with their TVs. It's called interactive television, and it could mean the biggest change in American lifestyles since Uncle Miltie first beamed into our living rooms more than 40 years ago.

By Daniel Tynan

ILLUSTRATION BY ERIC JOHNSON



Sending out digitally compressed programs lets broadcasters squeeze up to 10 channels into the space now occupied by one, giving viewers a choice among 500 channels instead of 50. Using smart

EPG you'll be able to call up a list of, say, all the children's programs showing at a particular hour, view a brief description of each, and then jump to the one you want to watch.

And there won't really be 500 separate channels anyway. Most of this new capacity will be soaked up by games, shopping services, and multiple runs of pay-per-view movies. In fact, the new TV will look remarkably like the old TV. The difference is you'll have more choices, exert more control, and pay a little more for the privilege.

Virtual VCR

With ITV, you'll be able to "rent" movies and TV shows without ever leaving your living room—and have the rental fee added

boxes and remotes, you'll be able to play along with "Jeopardy," make airline reservations, buy a zirconium pinkie ring, or simply tell the TV what you want to see and when you want to see it. Advanced switching technologies put the intelligence at the other end, letting programmers deliver just the program you request—all over a single channel.

Digital compression is here. Crude forms of interactivity are here now. Exactly how all this cool stuff will be delivered, who will deliver it, and how much it's going to cost is still up in the air. What's already clear is that once you use ITV, you'll never look at television the same way again.

Channel Surfing a Tidal Wave

"Five hundred channels is an ocean of opportunity," says Richard Haukom, a San Francisco-based multimedia developer. "Something's got to go in there, even if it's awful."

Fortunately, having 500 channels won't necessarily mean zapping endlessly past the Quilting Network, the 24-hour Geraldo Channel, and an interminable string of Cher infomercials. Instead of surfing

directly to your cable or phone bill, instead of having to hand over cash at the video store. This service will be available in two flavors: near video-on-demand, and true video-on-demand.

With near video-on-demand, the same movie runs on, say, ten different channels, with starting times staggered 15 minutes apart. To order a film, you select it from an onscreen menu, then wait a few minutes for the next showing. If you want to go into the kitchen to make popcorn, you can "pause" the film and pick it up later on another channel, more or less where you left off, at any time over the next couple of days. A smart interface steers you to the proper channel, and the cable company bills you once no matter how many times you watch different parts of the movie.

True video-on-demand starts the film when you order it. You can pause, fast-forward, or rewind it, just as if you'd popped a tape into your VCR, only with laserdisc-quality images and effects. But delivering true video-on-demand requires fiber optic cabling and so-called "video jukeboxes" at the broadcast source. These powerful but expensive com-

puters can store huge libraries of movies on disk or computer tape and process thousands of simultaneous viewer requests.

By contrast, it's fairly easy for cable providers to deliver near video-on-demand using existing coaxial cables and digital compres-

Five hundred channels is

an ocean of opportunity.

For the past year, the world's largest cable, phone, and computer moguls have been playing "Let's Make a Deal," teaming up to invest billions of

Something's got to fill it, even if it's awful.

dollars to build and test interactive TV systems. Fueling this frenzy is the convergence of several complementary technologies—from digital compression and computerized cable boxes to sophisticated phone-switching equipment.

through station after station, you'll navigate between them using a new electronic programming guide (EPG) such as Prevue Express, StarSight, or TV Guide On Screen. These guides organize programs by content, not by their location on the dial; using an

The ITV Guide

THE MEDIA—AND MULTIMEDIA—GIANTS smell a potential gold mine in interactive television services. As companies figure out how to cash in, you can expect this impressive list to double before the spring thaw.

AT&T/Viacom OneTouch: This highly anticipated project in Castro Valley, California, will feature multiplayer games, video-on-demand, videophones, the StarSight programming guide, and interactive versions of MTV, Nickelodeon, and VH-1. Testing of the 18-month trial began in the fall of 1993 with prototype cable boxes, expanded channel capacity, and pay-per-view. A fuller suite of interactive services is due this spring.



GTE Main Street

Eon: Eon will offer dozens of services, including games, banking, food delivery, and opinion polling via a row of interactive icons displayed over specially prepared programs. To use Eon, you'll have to shell out \$450 for an HP-built box, plus occasional transaction fees. Service is due to

begin in Boston, Chicago, Dallas, Houston, Los Angeles, New York, Philadelphia, San Francisco, and Washington, D.C., in mid-to late 1994, depending on FCC approval in each city.

GTE Cerritos Project: One of the earliest and most extensive ITV tests, this Cerritos, California, project features pay-per-view movies, video-on-demand, teleconferencing, even limited-scale videophone service. The project is scheduled to end in July.

GTE Main Street: This information, shopping, and games service costs \$9.95 a month and delivers still photos accompanied by text and audio to your TV. Service is currently limited to selected Boston suburbs as well as Carlsbad and Cerritos, California.

Interactive Network: Play along with sporting events, game shows, and TV dramas using IN's \$200 control unit. Basic service costs \$15 a month; for \$25 a month you can compete with other IN players. Currently in Sacramento, San Jose, San Francisco, and Chicago, IN plans to move into six or seven major U.S. cities by the end of 1994.

IT Network's Interactive Channel: Advertising-driven, this service will offer newspaper classifieds, yellow pages, store catalogs and more, using still images, audio, and text. Currently conducting limited testing in Birmingham, Michigan and Denton, Texas, the company has plans to go national later this year.

NTN Communications: NTN's handheld system lets you play along with big-time sporting events. A longtime staple of hotels and bars, NTN is now offering popular interactive games such as QB1 (where players predict football plays) to home users of GTE's Main Street in Newton, Massachusetts, as well as Carlsbad and Cerritos, California.

Rochester Telephone Corporation: This regional telephone company is teaming up with USA Video to deliver video-on-demand, home shopping, and other services via fiber-optic lines to 100 customers in the Rochester, New York, area. Slated to begin last fall, the service will cost \$10 to \$15 per month, plus \$2 to \$4 per movie.

Sega Channel: For about \$14 a month, Sega will pump the adventures of Sonic the Hedgehog and other games directly to players' TVs, thanks to a special cartridge that hooks Sega Genesis machines to a cable feed. Test broadcasting is scheduled to begin in January, 1994, in Hoover, Alabama; Canyon Country and Sunnyvale, California; Litchfield, Connecticut; DeKalb, Illinois; Salem, New Jersey; Buffalo, New York; Portland, Oregon; Kingsport, Tennessee; Reston, Virginia; Charleston, West Virginia; and Cheyenne, Wyoming.

Time Warner "Full Service Network": Time Warner's full-blown test of true interactivity brings educational programming, video-on-demand, multiplayer games, full-motion home shopping, even long-distance phone service to 4,000 homes in Orlando, Florida.

Time Warner "Quantum": This experimental 150-channel network now operating in Queens, New York, mixes cable and broadcast programming with pay-per-view movies and events costing \$4 to \$20 a shot.



Tele-Communications Inc.: Cable giant TCI, which is being acquired by Bell Atlantic, is reported to be testing a variety of services in the Denver area, including TV Guide On Screen, video-on-demand, and near video-on-demand services.

Trakker: Trakker offers the Prevue Express electronic programming guide and Sports Trakker—a sports information service—for \$3 to \$6 a month. Future services will include news, weather, dining guides, and shopping. Trakker is available in parts of Chesterfield, Missouri; Omaha, Nebraska; Tulsa, Oklahoma; and Knoxville, Tennessee.

U.S. West: Viewers in Omaha, Nebraska, will be able to dial up 77 channels of video-on-demand and interactive games and services, some provided by game developer Electronic Arts. Set-top boxes built by AT&T using 3DO technology are part of a market trial of 9,000 homes beginning in mid-to late 1994, pending FCC approval.

Your Choice TV: The brainchild of the Discovery Channel's John Hendricks, YCTV will offer replays of popular TV shows for 50 cents to \$2 a show. Testing was scheduled to begin last fall in West Palm Beach, Florida, then expand to the Chicago suburbs; Columbus and Dayton, Ohio; Nassau County and Syracuse, New York; San Diego County, California; and Spokane, Washington, by April of 1994.

sion techniques. Some pioneering systems even had technicians running around plugging video tapes into VCRs. This relative simplicity makes near video-on-demand the best technology for the near term.

John Hendricks, CEO of Your Choice TV (YCTV) in Bethesda, Maryland, wants to apply the concept of near video-on-demand to popular television shows. Imagine that you missed last week's episode of "Beverly Hills, 90210." Simply tune in to YCTV, and enjoy Luke and Shannen-style your convenience for between 50 cents and \$2 a pop.

In Hendricks's vision of a 500-channel world, the first 50 channels will provide traditional broadcast and cable programming, with the next 100 or so dedicated to showing the 10 most popular movies at staggered starts. The rest of the dial would be devoted to YCTV's staggered reruns, magazine-style special-interest channels, information services, and more.

Over the next five to ten years, as phone and cable companies link more households with fiber optics, true video-on-demand will gradually replace its low-end cousins. Time Warner will start testing true video-on-demand in April as part of its 4,000-subscriber Full Service Network in Orlando. AT&T and Viacom plan to offer the service to 1,000 customers this spring in Castro Valley. And in Cerritos, California, GTE is wrapping up five years of extensive testing of everything from true video-on-demand to video phones.

"We use video-on-demand extensively," says Betty Hyatt, a 46-year-old schoolteacher in Cerritos. Betty, her husband Randy, and their two teenage children have been using GTE's system for the past 18 months. "We have it connected to three different TVs, and we often invite friends over to watch three different movies at the same time—the men in one room, the teenagers in another, the women in a third," she says. "We call it the Hyatt Multiplex."

The Play's the Thing

Video-on-demand offers only a limited choice of interactions with the tube: You can buy a movie and then pause and restart it once or twice, but that's about it. Real interactivity comes when you stop watching TV

As the Channel Turns

TRY CABLE SURFING on 500 channels, and you may find yourself drowning in options.

Fortunately, interactive programming guides such as StarSight, Prevue Express, and TV Guide On Screen will be there to throw you a lifeline, making it easy to steer between stations.

StarSight

StarSight displays program choices in a traditional grid layout (shown), or by category such as Sports or Movies. StarSight also makes it easy to program



StarSight

a VCR—just highlight the show's name and hit the record button on your remote.

Prevue Express

Click on a movie listing in Trakker's Prevue Express listing, and up pops a brief



Prevue Express

description. Like StarSight, Express displays shows by category as well as by time and will offer one-touch VCR programming.

TV Guide On Screen

Initially, TV Guide On Screen will let you select shows by subject, watch one station while browsing through others, and lock out programs you don't want your kids to see.



TV Guide On Screen

and start playing it. That's why ITV will come with a roster full of interactive game shows, sports, and video games.

Sometime in 1994, Sony Pictures Entertainment will launch the Game Show Channel, a nationwide cable station serving up such classics as "Beat the Clock," "Wheel of Fortune," and "Jeopardy" 24 hours a day. Almost anyone will be able to watch the channel. But you'll need spe-

cial equipment if you want to play along.

One such gadget is Zing, a combination set-top box and handheld remote that looks like something used to stun aliens in "Star Trek." The Zing box receives specially encoded signals broadcast along with the shows and transmits them to a small LCD screen on the handheld unit. Viewers enter their responses by punching buttons on the remote device, then send the information back to Zing's national computer center via a phone hookup.

Zing's cost: around \$125 for the box, plus an annual \$25 subscription fee.

Viewers in Northern California and Chicago who want to get into the game can tap into the Interactive Network right now. Like Zing, IN simulcasts information to a portable control unit, which viewers use to

find the questions for "Jeopardy" answers, match wits with NFL coaches and quarterbacks, or guess whodunit in "Murder, She Wrote." IN's \$200 control unit is bigger than Zing's—about the size of a dictionary—with a larger LCD and a full alphanumeric keypad. But because IN broadcasts its signal separately on an FM band, it doesn't require a set-top box. Advertised on late-night infomercials on standard broadcast

channels, Basic IN service costs \$15 a month; for an extra \$10 a month you can compete against other interactive players for cash and prizes. IN's customers say the games are like potato chips—nobody can play just one.

"One day last year I played my first football game in the morning, one in the afternoon, and another at night," says IN subscriber Reinwald. "Fortunately there were intervals in between where I could eat and drink. My wife sometimes calls herself an interactive widow."

Viewers who prefer Super Mario Bros. to the Super Bowl can tune to the Sega Channel. By plugging a special cartridge into a Sega Genesis game machine and hooking it to the TV cable, you'll be able to pipe video games directly to your living room. Starting this spring, the Sega Channel will broadcast approximately 50 games a month, as well as previews of unreleased games, all of which

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you can download into your system and play as often as you want for about \$12 to \$14 a month.

Sega's system is strictly one-way—there's no way to compete with players in other households—and even players of IN and other game systems aren't interact-

When you pick the

ing with the TV as much as with their control units. That's likely to change.

Once ITV matures, "you'll be able to affect what happens on TV shows," predicts Diana Gagnon Hawkins, principal of Interactive Associates, a consulting firm in Portola Valley, California. According to Hawkins, producers can make shows interactive by filming each possible outcome of the show in advance and then letting viewers choose the ones they want to see. "When you pick the letter 'L' with your remote," Hawkins says, "Vanna will turn the letter 'L.'"

And Now, a Word from Our Sponsor

Though not as sexy as other interactive applications, home shopping may turn out to be the cash cow of interactive TV. And merchandisers will be milking it for all it's worth.

According to *Business Week*, Americans spent \$2 billion last year on home shopping, and another \$800 million on products sold through infomercials—all of it over the phone. With ITV, buying that set of gold-plated swizzle sticks—as well as an increasingly higher-quality selection of goods—will be as easy as pushing a button. QVC, Nordstrom, and Macy's have all announced plans for interactive shopping channels, and virtually every ITV system will let you order products direct to your home.

When Kathy Marmorek wants to browse the local shops, she sits in her easy chair and takes a stroll down GTE's Main Street, a shopping and information service that delivers still images, text, and sound to her TV for \$9.95 a month. Marmorek, a Newton,

Massachusetts, school counselor, uses Main Street to play games, track the stock market, and buy knickknacks for her home.

"I bought this lovely little vase for \$10," Marmorek says. "When I want to buy an item," she recounts, "I click in my password, then tell them what card I want to charge it to and where to send it. A few days later it shows up at my door."

Like Main Street, IT Network's Interactive Channel (IC) will use still images and simple menus as the gateway to a wide range of ser-

vices. Unlike Main Street, IC isn't likely to cost customers a dime—all its income is designed to come from advertisers. The Dallas-based company, which plans to go national later this year, is planning to offer services similar to those found on Main Street, plus electronic yellow pages, classified ads, catalogs, and movie previews.

Reston, Virginia-based Eon will take a different tack, transmitting radio waves to a box on top of the TV set that displays a row of icons at the bottom of the screen. You simply point the included remote at the appropriate icon, then click the button to order a transcript of "Firing Line," respond to an opinion poll, program your VCR, or have groceries delivered to your door.

Eon has signed agreements with a variety of producers to make their shows and commercials work with its interactive system, and it plans to make its service available in nine major U.S. cities by the end of 1994. Consumers will have to pay about \$450 for the Eon box (made by Hewlett-Packard) plus occasional transaction fees. Jerrold Communications, one of the leading manufacturers of cable boxes, is also building Eon technology into its next generation of set-tops—but the companies have not determined whether customers will have to pay extra for the Eon capability.

Then there's the Lincoln Mint Network, an ambitious 24-hour channel featuring live chat and performances from members of the music, film, TV, sports, and fashion industries. Every six minutes, viewers will be able to press a button and buy a product related to the entertainment on screen—CDs, videocassettes, sportswear, you name it. "It's a

letter "I" with your remote,

combination telethon, 'Star Search,' 'The Ed Sullivan Show,' and 'Good Morning America,'" says Thomas E. Keith, president of Los Angeles-based LMN.

The heart of LMN's system will be the "Vault," a box that hooks to phone lines and includes a coupon printer, a magnetic-stripe reader for credit cards, and a

speaker phone. According to Keith, the Vault will be distributed free of charge six to nine months after the network begins broadcasting this winter. Keith claims LMN is working on deals with a number of entertainment figures and cable operators, but he declined to name any of them.

Vanna will turn the letter "L."

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Circle 129 on Reader Service Card

The Cable Boxes of the Future

IF THE BOOB TUBE IS GOING TO GET SMARTER it will need some help. No matter how programmers deliver interactive services—over coaxial cable, phone lines, or fiber optics, by satellite dish or simulcast over the FM band—you'll need new hardware to make it happen. The battle for the top of your TV set is about to begin.

The biggest war zone will be in the arena of set-tops: converter boxes, typically provided by cable companies, that sit on top of your TV and let you unscramble the cable signal. As programmers begin to use digital compression

to squeeze more channels across the wires, those boxes will need a computer chip that lets them decompress the signal. Set-top manufacturers Scientific-Atlanta, General Instrument, and others are just now starting to crank out boxes containing these new chips.

Some vendors want to take this process a step further, building even

more intelligence into the box, such as programming guides and the ability to manipulate 3-D graphics. General Instrument, Intel, and Microsoft are planning to team up to create a box powered by Intel's 80386 microprocessor and controlled by an interface patterned after Microsoft Windows.

Meanwhile, Scientific-Atlanta, Motorola, and Kaleida Labs (a joint venture of IBM and Apple Computer) are working on a box of their own. Toshiba and Silicon Graphics—the

folks responsible for creating the dinosaurs in *Jurassic Park*—are reported to be developing a sophisticated set-top for Time Warner's Full Service Network. And the 3DO Company plans to get into the act with an ITV version of its game technology that will support interactive TV services. Many other companies are also scrambling for a piece of this

potentially huge market. Boxes will cost \$300 to \$700 when they debut in about a year.

In the meantime, you'll be able to talk back to your TV set using other devices, most of which add interactive elements to existing television programming. Here are a few of the prime candidates that are, or soon will be, available.

Hewlett-Packard prototype

HP's modular box will be upgradeable via a smart card, so users won't have to worry about obsolescence. Expected to be available this summer, this \$450 box will let you tap into Eon's interactive shopping and information network.



Jerrold DigiCable

Interactive Network's Control Unit

This dictionary-size \$199 unit receives FM subcarrier signals and converts them into text on its 1-by-4-inch screen. A full alphanumeric keyboard

makes it easy to play along with "Wheel of Fortune," "Jeopardy," and a variety of sports and drama programs.



Jerrold DigiCable prototype

Jerrold's upcoming smart box will receive more than 500 channels and can be upgraded for the 386/Windows technology coming from Intel and Microsoft. The DigiCable should be available this fall for between \$200 and \$400.

Interactive Network



HP prototype



Sega Genesis

NTN Communications' QB1

NTN's popular handheld device lets you call the plays along with NFL teams, as well as play a dozen other trivia and sports games.

Scientific-Atlanta 8600X

If you get cable TV, this box may already be sitting on top of your set. Scientific-Atlanta's 8600X terminal is also

upgradeable; by the middle of the year you'll be able to plug it into a digital docking station to receive digitally compressed signals.

Sega Genesis and the cable adapter

A special cartridge that plugs into Sega's 16-bit Genesis video game player is your ticket to the Sega Channel. The standard player is available at con-

sumer electronics shops for less than \$100; pricing for the special cable adapter has not yet been set.

Zing

Many interactive programs won't mean a thing if you ain't got that Zing. This combination set-top and handheld device will let you interact with the Game Show Channel, HBO, MTV, and other shows for less than \$150 for the box, plus a \$25 annual subscription fee.



Scientific-Atlanta 8600X



Zing



NTN Communications QB1

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ELECTRONIC ARTS

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Don't Touch That Dial

Despite the frenzy of activity, the upcoming interactive, 500-channel world won't be arriving overnight.

To get at all these new channels you'll need a box on top of your TV that's smarter than the one sitting there now. The changeover will take some time. Cable industry insiders estimate that by the end of 1994 less than 5 percent of the country's 62 million cable subscribers will have boxes capable of decompressing digital transmissions.

There remains the question of just how smart that box should be. High-tech heavyweights such as Microsoft, General Instruments, and others are working on pricey computerized set-tops with the ability

For ITV to reach its full potential, fiber optics will also be necessary. Upgrading the existing cable system to fiber will cost an estimated \$30 billion. For phone companies, the estimates are closer to \$300 billion. While the shift to fiber is already underway, a coast-to-coast fiber network that runs all the way to the customer's TV set is unlikely to happen before the end of the millennium.

In the meantime, the fledgling interactive industry has to grapple with a host of different systems and approaches, many of which are incompatible with each other.

"If you're trying to produce an interactive TV show, you're almost required to make a different version for all the interactive TV systems being tried," says Interactive Associates' Hawkins.

"We have to solve the standards issue for programmers and hardware manufacturers."

Finally, lost amid the confusion and the hype is the fact that nobody knows just what Bud and Sally Couch Potato really want from their TVs, or how much they're willing to pay for it. Ultimately, control over what interactive TV is, and what it will become, is in the hands of viewers.

"Until consumers have had experience making real decisions in spending discretionary income, and real decisions in family politics as to who's got the clicker and what's going to be on the TV screen...it's all speculation," notes David Serlin, executive vice president for ICTV.

Back in Cerritos, the Hyatts offer an inkling of the possibilities. In addition to viewing movies, they use their GTE system for home banking and to order services such as flower deliveries. "People ask if this has turned us into couch potatoes," Betty says. "If anything, it's made me more selective with my time. It gives me more freedom to see people I want to see instead of the bank teller or the librarian. As my husband says, 'It's all about choices.'"

Tune in Tomorrow

The potential of ITV to offer myriad new choices is undeniable. In the future, you'll be able to call on "intelligent agents" to do your channel surfing for you and find programs based on your previous selections. You'll play electronic football games where every player is controlled by a real person. And when ITV meets up with virtual reality, the sky's the limit.

"Say you're watching a fashion show on QVC," says Rob Agee, managing editor of the *Interactive Television Report* in Costa Mesa, California.

"With virtual reality, you could effectively try on the new suit—have a model of yourself built into the box that walks down the ramp in front of the photographers, choose different colors and sizes, even 'feel' the fabric. The most compelling use of TV has not yet been dreamed of."

Nobody really knows just what

to handle realistic-looking 3-D graphics. The 3DO Company has signed a deal with U.S. West Communications to test 3DO technology in an ITV trial next year in Omaha. And the Silicon Graphics/Nintendo joint venture also plans on making its set-top entertainment box serve as an interactive TV controller. With these kinds of boxes, the cable or phone company would send the entire show or game down the wire to the set-top, where it would be processed by the box's internal computer.

Other competitors, including ICTV, which makes cable delivery systems in Santa Clara, California, believe the right approach is to give consumers relatively simple boxes, concentrate the high-powered hardware at the broadcast end, and rely on sophisticated switching equipment to juggle thousands of viewer requests. Which kind of system consumers encounter will depend on where they live and who provides their cable service.

Bud and Sally Couch Potato

want from their TVs.

*...Santa behind schedule...
...unexplained delay...
...Rudolph frantic...*



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HANG ON!
PANASONIC INTRODUCES
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serene...atically going to
rumble up from...high.



More responsive, more colorful, and up to 50 times more powerful than ordinary systems. It's 3DO technology and Panasonic makes the only system that has it.

Strap yourself in; this is no armchair flying game.

You plunge into pursuit, barrel-rolling through the atmosphere at Mach speeds. Pulling up to skim the planetary terrain, you lose your horizon and go into a spin. Earth. Sky. Earth. Sky. Earth. And your stomach just can't catch up. This is a video game you can feel. This is R·E·A·L.

Introducing the Panasonic R·E·A·L 3DO™ Interactive Multiplayer™. The most highly evolved integration of audio, video and interactive technology available.

What you're seeing are near 3-D graphics

combined with state-of-the-art flight effects. What you're hearing is full, digital CD sound. Definitely cinematic.


Except that you're in control in a world without edges. Fly as far as you want left or right and the program never stops you.

Facts. Up to 50 times more powerful than ordinary PCs and video game systems. With up to 16 million displayable colors for photorealistic picture quality. And a custom multimedia architecture that makes

R·E·A·L so responsive it practically redefines interactivity.

There's a range of 3DO software available; from flight simulators to education, information, sports and children's titles. Plus, R·E·A·L also plays audio and photo CDs and soon, with an optional adapter, full-length movies.

Entertainment, music and more interaction than ever—the Panasonic R·E·A·L 3DO Interactive Multiplayer brings you the future in one amazing unit. And, yes, it'll fly.

To speak directly to the dealer nearest you, call 1-800-REAL-3DO. 



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Circle 119 on Reader Service Card

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Introducing a new breed of software. A new extreme. A quantum leap in combat simulators. It doesn't push the envelope. It shreds it.



▲ **Mechwarrior II: The Clone** creates a new reality. A world of sights, sounds and action that can bring you to the brink of sensory overload. Feel what it's like to control



100 tons of pure hostility, with enough firepower to vaporize a squadron of F-15s. ▲ **Atop a 31st-century BattleMech** four stories high, you're thrust into the most eye-popping missions imaginable. Each mission a frenzied fight for victory, honor

and the glory of The Clone. ▲ **Mechwarrior II** is a guaranteed adrenaline rush. Go one-on-one in real-time via modem. Pick from 18 phenomenal 'Mechs and 40



tuturistic weapon systems. Use multiple POVs. Select from hundreds of missions in every conceivable environment. Choose instant action or a complete career. ▲ **Mechwarrior II: The Clone**, so

heavy it crushes the competition.



ACTIVISION

Mechwarrior II: The Clone is available for IBM and compatible computers. SNES version also available. To order see your local retailer or call (800) 477-3850.

BattleTech, **BattleMech**, 'Mech and **Mechwarrior** are Registered Trademarks of FASA Corporation

Circle 106 on Reader Service Card



The new platform's great graphics won't mean a thing without equally great games

By Gregg Keizer and Gina Smith

You've waded through months of 3DO hype, and now it's time to make the big decision: Should you jump on board right away, wait for prices to come down, or save your money for something better?

It's a tough choice: Any way you look at it, Panasonic's new FZ-1 REAL 3DO Interactive Multiplayer blows the doors off every other electronic entertainment platform:

PC, Macintosh, Sega, and Nintendo systems included. You'll notice an immediate difference between a game you play on 3DO and one on a Sega Genesis or Super Nintendo Entertainment System (SNES). The 3DO processes animation faster and displays it more fluidly on your TV, while its ability to manipulate complex images with detailed textures makes action

games look more real—and less like cartoons. The comparison with PC and Mac games is even more dramatic. Because even the fastest personal computers have trouble displaying detailed, complex shapes quickly, your suspension of disbelief goes out the window. The 3DO system's built-in graphics circuitry, on the other hand, is the best on the market today.

Then again, all that graphical power and technical wizardry doesn't come cheap. Six to seven hundred dollars is a lot of cash to fork over for yet another set-top game box—particularly if you've already got a multimedia computer in the den, and maybe a game deck in the living room. For that same \$600, you could get six video game machines or three audio CD players or two top-notch VCRs or at least a dozen boxes of entertainment software. So how do you decide?

As any good gamer knows in his gut, the lure is in the titles. Games make the system, not the other way around. Even if you're a digital junkie hooked on having the biggest, baddest box on the block, you'll quickly get bored without access to a rich collection of fun and entertaining software.

And that means more than fancy graphics. It means compelling themes, solid game mechanics, and the depth to support repeat play. Unfortunately, the first round of titles for new gaming platforms seldom wins points

for originality. It's no surprise that many first-generation 3DO games do little more than spruce up already popular games from other platforms.

Initially, you'll see a lot of sports and action games on the 3DO platform. What you'll miss are the complex interactive adventures and simulations that work so well on desktop computers. Panasonic's 3DO box comes with a minuscule 32K of permanent storage, enough to save maybe one game. If you want more, you'll have to hope for an optional memory storage expansion unit.

Without such an extra device, there's not a lot of incentive for developers of products like, say *SimCity*, to create games for 3DO. We only hope that at least some of the other hardware manufacturers who have signed up to manufacture 3DO boxes—including Sanyo and AT&T—will have the forethought to build in more storage.

Game availability should improve in coming months as developers retool to take full

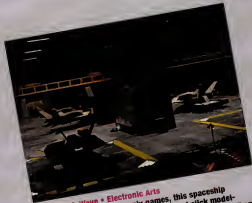
advantage of 3DO's phenomenal graphics capabilities. The company claims that more than 150 titles are in the works. But 3DO developers report that building 3DO games takes longer than they expected, so initial buyers will have to make do with a couple dozen choices rather than the approximately 100 titles that were expected to debut along with Panasonic's first box.

The real problem isn't the meager number of applications, though. It's the lack of a "killer app"—a piece of gotta-have software that single-handedly justifies buying the hardware. Crystal Dynamics' *Crash 'N Burn*, a top 3DO title that ships with the Panasonic box, is a stellar racing game. But will it be intriguing enough to actually sell the \$600 3DO machines the way *Sonic the Hedgehog* drove the Sega Genesis's success? We don't think so.

Long term, executives at the 3DO Company—the Silicon Valley startup that designed the system and is licensing it to every com-



Crash 'N Burn • Crystal Dynamics
Included with the Panasonic FZ-1 Interactive Multiplayer, this postnuclear race-and-kill game shows off 3DO's excellent animation technology. The scenery looks terrific as you scream down hills, barrel through tunnels, and speed around curves. Things get hairy as you blow up other cars, watching the action from behind your car or through its windshield. After a while, though, you may discover that the game lacks "legs"—there's simply not enough variety to keep you coming back for more.



Shock Wave • Electronic Arts
One of the few 3DO-only games, this spaceship shoot-'em-up boasts video clips and slick model-based scenery. That should make it a better pick than its closest competitor, Crystal Dynamics' *Total Eclipse*.

LEGEND

Available only on 3DO

Available on other platforms

Hands-on tested



IntelliPlay Football • Intellimedia Sports
Not exactly a game, *IntelliPlay Football* serves as a digital coach offering instruction on the finer points of the sport. A similar title will be available for baseball.



Twisted • Electronic Arts
A goofy game-show title for the whole family, this live-action, multiplayer interactive contest brings the boob tube to 3DO. And if you don't have any friends available to play, best friend Howard will fix you up with six half-baked contestants that'll match wits with you in eight wild competitions.

sumer electronics manufacturer under the Pacific Sun—want to position the technology as a lot more than just a TV-top game and multimedia machine. They envision it as a next-generation, CD-based movie player and an advanced cable box that will be your on-ramp to the so-called data superhighway. But except for a few trials, 3DO isn't playing movies or hooking us up. Today, it's purely a games system—admittedly the most powerful one you can buy.

So should you get one? If you're a gadget and game freak (and you know if you are) able to swing the price tag, go for it. If you can hold off awhile, prices are expected to drop below \$500 by Christmas 1994, and to \$300 by the end of 1995. And more games are being developed all the time. If you're still on the fence, it's up to today's small, uneven group of 3DO titles to convince you. To help you decide, here's a look at the first batch of 3DO games. Check them out.

Power Means Performance— What's Inside the Box?

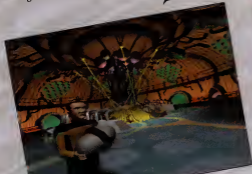
The key to the FZ-1's power lies in its trivalve heart: a 32-bit RISC-based processor to shuttle data and a pair of specialized graphics processors to create and process images.

The result is faster image manipulation of more pixels on the TV screen. Translation? Smooth, lifelike animation done in real time. No waiting for the screen to redraw background scenery, no pauses or herky-jerky animation, no restriction to sharp-edged polygons stripped of realistic details—problems on even the fastest personal computers.

The box also holds 3MB of memory and a

double-speed CD-ROM drive that plays not only 3DO titles but also regular audio CDs and Kodak's Photo CDs. With the SuperMac's Cinepak software-only video compression technology to decompress the video data on the fly, the 3DO machine displays full-screen, full-color video at a flicker-free 30 frames a second. PCs and Macs can't do that, either. Sound is digital, too, thanks to a high-speed digital signal processor (DSP) chip, so the audio output is good enough to eliminate the need for a separate music CD player in your entertainment center.

—G.K.



Star Trek: The Next Generation • Spectrum HoloByte
One of the first tie-in titles for 3DO, this adventure game wimps out by using 3-D renderings of Picard, Riker, Data, and the gang instead of employing live action video, as other 3DO movie tie-ins plan to do. Doesn't matter. Doesn't even matter if the story's any good. If you like the TV show, you'll love running the crew with 3DO.



Stellar 7 • Dynamix
Starting with its polygon-based PC science-fiction shoot-'em-up game, Dynamix added an impressive layer of 3DO imagery. This fast-action game delivers detailed enemy shapes, new music, and awesome animation as you battle your way through seven levels of combat.



Total Eclipse • Crystal Dynamics
Another shoot-'em-up game, this new-for-3DO title has you firing at aliens and flying through canyons. And with 3DO's 3-D Audio Imaging, you'll actually hear the enemy ships coming up from the rear.



3D Football • Park Place
This underdog football game may be a good call—it'll sport full-screen players and a free-floating camera. But Park Place's efforts on other platforms, such as NFL Football on the SNES, couldn't make it into the quality end zone.

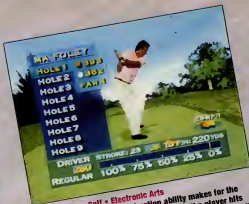


Mad Dog McCree • American Laser Games
Replacing animation with full-motion video, Mad Dog McCree clearly demonstrates 3DO's video superiority. Facing Mad Dog's gang on Western-wear streets, you knee away at live-action actors eager to stare you down and lay you out.



The Oceans Below • The Software Toolworks

A good pick for the family, this virtual diving expedition to the South Seas includes voice narration, a background score, and 45 minutes of video showcasing shipwrecks and sea life.



PGA Tour Golf • Electronic Arts

The 300 machine's animation ability makes for the coolest golf graphics going. The way the player hits through the ball is more lifelike than in any other golf game, and the digitized course scenery is extra crisp. Feature-wise it matches but doesn't beat similar titles on PCs and Macs.



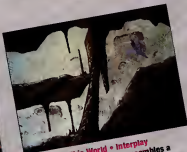
Space Shuttle • The Software Toolworks

You get to ride the Shuttle on 53 different missions. Good on the PC, it should be better on the 300, thanks to more and smoother video clips from NASA.



Road Rash • Electronic Arts

Easy Rider it ain't. Originally developed for video game decks, this motorcycle racing game sparks hotter on the 300. The graphics are good enough to give you vertigo, especially while zooming down crowded city streets and twisting country roads.



Out of This World • Interplay

This action adventure resembles a Nintendo title as it sends you climbing and running through a dark landscape, battling aliens all the way. Out of This World stunned PC and video game players with its lifelike animation and cinematic perspectives, but this kind of thing should become commonplace in the 300 market.



Putt-Putt Joins the Parade and Putt-Putt Goes to the Moon • Humongous Entertainment

The 300 version of this acclaimed preschooler's exploratory program takes kids on a wandering journey through Cartown and into outer space. Humongous will also release 300 versions of its other edutainment titles, including Putt-Putt's Fun Pack, Fatty Bear's Birthday Surprise, and Fatty Bear's Fun Pack.





John Madden Football • Electronic Arts

The 300 version of this gridiron favorite brings you the larger, clearer, and more realistic players. Digitized from video footage of Madden and other real jocks, this is an improved version of what is always a top football fest. Take on the NFL with all the basics—including play calling and passing—mixed with advanced options such as instant replay and inclement weather.



Peter Pan • Electronic Arts

300 makes a big deal out of the machine's kid power, and Peter Pan delivers the goods. This fully narrated animated tale pits Peter against Hook, calling upon players aged six to ten to help move the story along by painting, drawing, and erasing pieces of the screen.



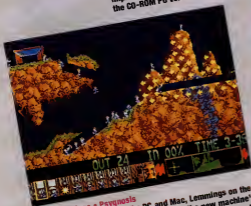
Battle Chess • Interplay

It's no surprise that Battle Chess is the first 300 chess game—it was the first 300 game to make it to CD on any chess game to make it to CD on any machine. Animated battles between pieces are its claim to fame, but don't expect much more than subtle animation improvements over what you've seen on the CD-ROM PC version.



The San Diego Zoo Presents The Animals! • The Software Toolworks

Straight from a successful run on the PC, The Animals! puts a zoo inside the FZ-1. The 300 version offers higher-quality video of these animals in natural habitats, a couple of hours of CD sound, and more than 1,000 pictures. This virtual visit is another good family choice.



Lemmings • Psygnosis

A classic puzzler on the PC and Mac, Lemmings on the 300 does little to take advantage of the new machine's capabilities: more levels, better animation, and sound enhancements are about it. But its solid game play and replay value make it a game worth having on any system, 300 included.



Shelley O'wall's It's a Bird's Life • Sanctuary Woods

A top 300 pick for preschoolers, this attractive production is essentially an interactive storybook. The story follows parrots on a trip south to the Amazon. Along the way, kids can listen to O'wall read, or they can play puzzles and games by themselves.

Fulfill The Ancient Prophecy

Forgotten Castle™ The Awakening



Your Father, the last king of Alonia, failed his quest to liberate the realm from Inhuman tyrants.

Now it's your turn. As Tris, the last heir to the

throne, it's your destiny to match sword and sorcery against the foul Ruzakian Hord. Seek incredible magicks to augment your power as you delve into the conquered city of Hedburg. A virtual 3-D fantasy world awaits your next command - Explore the dangers of the Old City, pit your awesome might against horrible creatures in a dark dungeon. Fight well and you may free the kingdom. Discover the Forgotten Castle and you may learn of your father's fate...

- Cinematic animation sequences unfold stories of mystery.
 - Fully digitized musical score and sound effects.
 - Combat system has adjustable skill levels.
- Monsters, characters, magic items and props are rendered with full 3-D effects.
 - A smooth scrolling virtual world, complete with unparalleled realism for die-hard fantasy role playing enthusiasts!

Circle 118 on Reader Service Card



TWIN DOLPHIN
GAMES, INC.



The First Annual Electronic Entertainment Gift Guide

The best games, multimedia, and hardware we've seen all year

Edited by Donna Meyerson

Dozens and dozens of multimedia PCs, Macs, and accessories. Hundreds of CD-ROM titles. Thousands of games. Billions and billions of . . . well, not exactly. But the electronic entertainment market is expanding like never before. And it's happening so fast, there's no way one person can keep track of it all.

That's why we've been looking at every entertainment product we could lay our hands on—installing, testing, and putting each one through its paces. A tough job, but we weren't going to let anyone else do it.

Here, then, are the best of the best in more than a dozen categories. The games and multimedia products that push the envelope in ways impossible only a few years ago. Whether you're shopping for yourself or for someone else, use this as your ultimate guide. Enjoy!

Hardware Heaven

These days, a computer just can't cut it without sound and other extras. You can start with a total system, or add the right peripherals to turn your boring box into a hot game and multimedia machine.



Apple's Macintosh Performa 550 offers a double-speed CD-ROM drive, stereo speakers, and a color monitor, all in one plug-and-play package. Just attach the power cord, and you're ready to go (Apple Computer; 800-538-8696; approximately \$1,899).

PC purists with deep pockets will appreciate Duracorn's **Multimedia DeskSaver 486/66DX2V**. For about \$5,000, you get a 66MHz 486 chip, a roomy 340MB hard disk, 16-bit sound, high-quality Altec Lansing speakers (including a subwoofer), a double-speed CD-ROM drive, and a huge 17-inch monitor (Duracorn Computer Systems; 800-551-9000; \$4,749).

Altec Lansing's ACS300 speakers pump out the volume with stereo-system fidelity. The clamshell satellites are compact and portable, while the subwoofer beams loud enough to shake the walls (Altec Lansing Multimedia Consumer Products; 800-648-6663; PC/Mac, \$400).



You'll need more than a mere mouse to get the most from today's high-speed games. Logitech's futuristic **Cyberman** offers precise control in up to six dimensions (Logitech; 800-231-7717; PC, \$129).



Bring The Arcade Home

Arcade-style games and gear deliver fast and furious fun right in your computer.



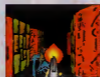
Lemmings 2, the Tribes introduces new, tougher breeds of Lemmings and bigger, more complex play levels than earlier versions of this silly, fun series (Pygmalis; 800-436-7734; DOS, \$59.95).



Spear of Destiny: A Wolfenstein 3D Adventure lets connoisseurs of bloody mayhem mow down Nazis in more than 20 new gore-soaked, 3-D levels (FernGen; 800-263-2390; DOS, \$59.95).



Sword and sorcery fans will thrill to the improved graphics and new moves in **Prince of Persia 2, The Shadow & The Flame** (Broderbund Software; 800-521-6263; DOS, \$49.95).



For a similar 3-D experience on the Macintosh, **Pathways Into Darkness** serves up a menagerie of monsters for your mutilation pleasure (Bungle Software Products; 312-493-2849; Mac, \$69.99).

For pure, mindless shoot-'em-up pleasure without a lot of gore, you can't beat **Crystal Crazy**, the even more abstract follow-up to the popular Crystal Quest (Casady & Broene; 800-359-4920; Mac, \$49.95).



Macintosh users can play along with the reversible **Gravis GamePad** (Advanced Gravis Computer Technology; 800-663-8556; Mac, \$49.95).

For upgrade artists, Media Vision sells a Fusion DoubleCD 16i upgrade kit that includes a double-speed CD-ROM drive, a 16-bit sound card, and speakers (Media Vision; 800-845-5870; PC, \$899).

The first step is sound, and "Sound Blaster compatible" is the key phrase in PC sound these days. They don't come any more compatible than Creative Labs' own 16-bit Sound Blaster 16 with Advanced Signal Processing (Creative Labs; 800-998-5227; PC, \$349.95).

For hard-core gamers who don't live alone, headphones can go a long way towards ensuring domestic tranquility. The Sony MDR-S101 will keep everyone happy (Sony Electronics; 800-342-5721; PC/Mac, \$29.95).



Get the **Toshiba XM-3401** double-speed drive when you need no-compromise performance (Toshiba America Information Systems, Olac Division; 714-583-3111; PC/Mac, internal \$695, external \$895). To play along on a budget, install a Creative Labs' double-speed **Omni CD** (Creative Labs; 800-998-5227; PC, \$399).

Already own a CD-ROM? Get extra speed from it with **Norton Speeddrive**—disk-caching software (Symantec; 800-441-7234; 803/Win, \$39).

Make Work Fun

Just because you're working doesn't mean you can't have a good time. These screen savers and innovative tools can really liven up a day at the office.



Create your own birthday cards, stationery, banners, and calendars in **Print Shop Deluxe**. You can choose from among more than 300 graphics (Broderbund Software; 800-521-6263; 803/Win/Mac, \$50 average street price).



Seize the Day: The Illustrated Personal Organizer displays beautiful scenes and inspirational quotes as it helps you organize your life on a daily, weekly, or yearly basis (Seize the Day; 707-942-9391; Win/Mac, \$59.95).



Snap 256-grey scale shots with the sleek and lightweight **FotoMan Plus** digital camera. Then pop your pics into your computer for editing, printing, or faxing (Logitech; 800-231-7717; PC/Mac, \$799).

Design your dream house or remodel your existing home, then find out what it will really look like with **3D Home Architect** (Broderbund Software; 800-521-6263; Win, \$80 average street price).

Flying toasters are toast. Berkeley Systems, the people who brought you the original After Dark flying toasters, are back with the crew of the Enterprise and even Donald Duck in **Star Trek: The Screen Saver** and **The Disney Collection Screen Saver** (Berkeley Systems; 800-344-5541; Win/Mac, \$49.95 each).



Watch **Opus 'n Bill Clinton** or bungee jump with a headless Bill Gates. A hilarious screen saver for fans of "Bloom County" and "Outlaw" (Belina; 800-268-6102; Win/Mac, \$44.95).



Tuxedo-clad iguanas playing the piano? On your screen? Original art and live video footage of reptiles and animated off-beat characters come together in **Imagineria** (Claris Clear Choice; 800-325-2747; Win, \$49).



Fun By Wire

Sure, playing games against a computer is fun, but it can't come close to facing off against (or teaming up with) a real human being.

The latest online services let you test your wits or trigger fingers against human opponents around the globe.



Build a railroad empire, get eaten by a dragon, or pilot a spacecraft in the year 2300 A.D. on the **Multi-Player Games Network**. **MPG-NET** supports a variety of graphical worlds that are explored by thousands of gamers. Just log on and join in! (Multi-Player Games Network; 800-438-4263; DOS/Mac, \$4/hour).



The games on **America Online** are all text, but role players will love *The Arena* where AOL members battle it out on their way to virtual fame, glory, or death. Look to *Omni Magazine* On-line for the latest in futuristic entertainment (America Online; 800-627-6364; PG/Mac, \$9.95/month for 5 hours, \$3.50/hour for additional hours).



The Imagination Network brings colorful online action to the entire family. Kids can get educated at the *Schoolhouse*. Adults can hit mad gambits in *CasinoLand*. And everyone will enjoy the *Clubhouse*, *SierraLand*, and the other locations in the "ImagNation" (Sierra On-Line; 800-743-7721; DOS, \$12.95/month plus options).

The classic 3-D dungeon fantasy game, **Ultima Underworld II: Labyrinth of Worlds**, will hook you for hours. Just remember to take time out to eat (Origin Systems; 800-245-4525; DOS, CD for DOS, \$79.95).



Live Your Fantasy

Let your imagination go wild in worlds you create, discover, and bend to your will.



Confront the forces of murderous evil in **Alone in the Dark**. The haunting sounds, scary monsters, and real-time 3-D animations in this creepy arcade adventure will make you glad for the light of the monitor (Interplay Productions; 800-969-4263; DOS, \$59.95; CD for DOS, \$79.95).



In **Star Trek: 25th Anniversary**, trekkies and trekkers alike can explore the final frontier as James T. Kirk himself (Interplay Productions; 800-969-4263; DOS, CD for DOS/Mac, \$59.95).



In a darker version of space exploration, **Spectrum HoloByte** challenges you to save a hapless planet from a renegade biological doomsday weapon (Spectrum HoloByte; 800-969-4263; CD for Mac, \$59.95; CD for Mac, \$99.95).



On the humorous and quirky side, **Freddy Pharkas: Frontier Pharmacist** casts you as a gun-slinging outflow-turned-pharmacist trying to save a frontier town (Sierra On-Line; 800-743-7725; DOS/Mac, \$69.95).



King's Quest VI: Heir Today, Gone Tomorrow conjures up an adventure/love story in an enchanted world of mystery and magic (Sierra On-Line; 800-743-7725; DOS/Mac, CD for DOS/Win, \$79.95).

Get
Smart

Explore information
with these interactive
picture books, reference
works, periodicals, and language
guides and tutors.



Armchair travelers will enjoy **From Alice to Ocean: Alone Across the Outback**. This unique package takes you on a journey across the Australian landscape with Robyn Davidson, four camels, and a dog. Follow along with an interactive CD-ROM disc and a coffee-table book of Davidson's text and beautiful photographs by *A Day in the Life* book series creator Rick Smolan (Chris Clear Choice; 800-325-2747; CD for Win/Mac, \$69).



Challenge your imagination and find the mysterious artifact in the **Realms of Arkania-Blade of Destiny**. Wield the legendary sword to save the Thervellians of Arkania (Sir-tech Software; 800-447-1230; DOS, \$59.95).



Sid Meier's Civilization lets players control the course of history and change the world as we know it. Talk about responsibility! (MicroProse Entertainment Software; 800-879-7529; DOS/Win/Mac, \$59.95).



Beautifully rendered screens and a haunting soundtrack combine to make **Myst** unique. It's a mystery, a puzzle, and an eye-popping alternative reality all in one (Bruderbund Software; 800-521-6263; CD for Mac, \$59.95).

Show the boss the stuff you're really made of with **Spectre Supreme**, the ultimate network tank game (Velocity; 415-776-8000; Mac, \$69.95).



Okay, so **The 7th Guest** may not be the fastest game, but this two-CD pack uses full-motion video to set a whole new standard for graphical terror (Virgile Interactive Entertainment; 800-874-4607; CD for DOS/Mac, \$59.95).



Based on Ray Fiolst's book series, **Betrayal at Krondor** is a 3-D role-playing game that challenges you to thwart the evil of Delekan's attempts to destroy the world (Dynamic; 800-326-6654; DOS, \$69.95).

An intricate mix of puzzles and mazes, **Oxyd Magnum!** is great for stand-alone users, and mind-boggling over a multiuser modem connection (Dongleware Publishing; 800-228-6663; DOS/Mac, \$59.95).



Ease video store confusion with **MovieSelect**, an online guide that recommends appropriate films and videos for you. It really works! (Paramount Interactive; 408-541-3264; Win/Mac, CD for Win/Mac, \$59.95).

Published quarterly on CD-ROM, **Newsweek InterActive** is *Newsweek* like you've never seen it—with movies, sound, and animation (The Software Toolworks; 800-634-6850; CD for DOS, \$129.95/year).

Don't spend \$800 on a 15-volume set of encyclopedias that's just going to take up shelf space and collect dust! **Compton's Interactive Encyclopedia 2.0** brings the peers alive with historical and educational videos, animations, slide shows, and much more (Compton's New Media; 800-862-2206; CD for Win/Mac, \$395).

Berlitz Think & Talk instructs you in Spanish, French, German, or Italian. Each package includes more than a half-dozen CDs packed with dialogues that you listen to and repeat (Hyperlink; 800-800-6270; CD for Win/Mac, \$199).



Sometimes the easiest way to gain experience is by playing a game. **The Rosetta Stone Language Library** teaches French, English, Spanish, and German by asking you to match pictures with descriptions (Fairfield Language Technologies; 800-788-0822; CD for Win/Mac, \$395).



Learn to read and speak Japanese in a flash with the animated, voice-annotated **Power Japanese 2.0** for Windows. (RayWare; 800-538-8867; CD for Win, \$389).



SimCity Classic-The Original City Simulator: the same says it all. Use your managerial skills to cater to the whims of your population of Sims (Maxis; 800-336-2947; DOS/Win/Mac, \$39.95). For the chance to move mountains and other extras, try the new **SimCity 2000** (DOS/Mac, \$69.95).

There is life after Mortal Kombat, PCs and Macs deliver hours of fun with software geared to reading, storytelling, drawing, learning, creating, and discovering new worlds.

Kid Stuff



Kids too small for *Jurassic Park* can explore the prehistoric world with *Dinosaur Adventure*. They can watch videos, identify names and pictures, click on the time line, and see the world as it was millions of years ago. Ages three to adult (Knowledge Adventure; 800-542-6240; DOS/Mac, \$49.95; CD for Mac, \$69.95).



Children can be caretakers in *Davidson's Zoo Keeper*. They'll track down troublemakers at the zoo and learn about more than 50 different animals along the way (Davidson & Assoc.; 800-545-7677; DOS/Mac, \$59.95).

Selene Putt-Putt can join the Cartoon Pet Parade, he has to explore a cave, a car wash, a drive-in theater, a toy store, and more. *Putt-Putt Joins the Parade* takes kids from three to seven along for the ride (Humongous Entertainment; 800-245-4525; DOS/Mac, \$49.95; CD for DOS/Mac, \$59.95).



The Living Book series of interactive storybooks will win the hearts of both you and your kids. *Just Grandma and Me* will delight ages three to six (CD for Win/Mac, \$40 average street price), while *Arthur's Teacher Trouble* is a hit for ages six to ten (CD for Win/Mac, \$50 average street price). *The Tortoise and the Hare* (CD for Win/Mac, \$40 average street price) brings interactive Aesop to the six-to-ten set, while *The New Kid on the Block* (CD for Win/Mac, \$40 average street price) animates poetry for kids six to twelve (Broderbund Software; 800-521-8263).



Let your kids join friendly parrots on an exciting adventure in *Shelley Duvall's It's a Bird's Life*. These funny birds teach kids to read while playing games, singing along, and having fun. Ages three and up (Sanctuary Woods; 800-872-3518; CD for Win/Mac, \$39.95).



The San Diego Zoo Presents The Animals features more than 300 animals and habitats with articles, video and audio clips, stories, photos, and more (Software Toolworks; 800-234-3089; CD for Win/Mac, \$99.95).



Arthur's Teacher Trouble



Animated, talking characters come alive and teach your child how to read, spell, and much more in the Dream Team Series. *Alphabet Blocks* is for ages three and up. *Beginning Reading* is full of fun for ages four to seven. And *Yabi's Basic Spelling Tricks* takes kids ages seven to ten on a jungle journey with a friendly wizard (Bright Star Technology; 800-328-6854; Win/Mac, CD for Win/Mac, \$49.95 each).



Imaginations run wild with *Kid Pix*. This popular paint program encourages junior to be creative with assorted electronic brushes, wacky graphics, and sound effects (Broderbund Software; 800-521-6263; DOS/Win/Mac, \$39.95).



Oozing characters and a provocative story line have made *Where in the World is Carmen Sandiego?* the most successful educational game to date (Broderbund Software; 800-521-6263; DOS/Mac, \$34.95; CD for DOS \$39.95). Spin-offs such as *Where in the U.S.A., Where in Time, Where in Space*, and *Where in America's Past* are fun, too.



Small hands have trouble grasping grown-up input devices. Make them comfortable with this kid-sized *"My" Joystick* (Suncom Technologies; 708-847-4040; PC, \$24.99). For just plain fun, the *Jurassic Mouse* is painted to resemble reptile skin (Apogee; 800-448-1184; PC/Mac, \$49).



The Kids Mouse is shaped like a real one, with cute ears and a tail, too (Logitech; 800-231-7717; PC/Mac, \$59).

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MONSTER MACHINE



In the future: There will be four more puzzles at \$2.00 each and one tie-breaker at \$1.50. You will have three weeks to solve each puzzle (suspense is part of the game!). We don't know how many people will enter but typically 47% will advance through Phase I, 30% through Phase II, 25% through Phase III, and 20% through Phase IV. The tie-breaker determines the winner. If players are still tied they will each receive the grand prize if they are playing for.

VOID WHERE PROHIBITED • ENTRY DEADLINE: POSTMARKED BY MARCH 5, 1994 • ENTRY FEE MUST BE INCLUDED
Only one entry per person. Employees of Fundamenium, Inc. and its suppliers are ineligible. Judges' decisions are final. Where judges are in error the sponsor's liability is limited to the amount of entry fee paid. Not responsible for loss, damage or delay in mail. Postmark on envelope. Please send all entries to: **WORLD'S LARGEST MATHS CONTEST, 1000 Washington Ave., S., Eden Prairie, MN 55334.** Merchandise prizes and models are trademarks of their respective companies who have an affiliation with this contest. © 1993 Fundamenium, Inc.

Roll Over Beethoven

Remember when you actually needed talent to make music? Nah! With today's super-sensuous gadgets and gizmos, all you need is a talented computer.

Multimedia Beethoven: The Ninth Symphony tells you everything you ever wanted to know about the master's most famous work. The interactive CD-ROM lets you play all four movements, read about its musical concepts, even play a game about it (Microsoft; 800-426-9400; CD for Win, \$79.95).

A music tutorial like you've never heard! Join **The Musical World of Professor**

Piccolo on his wild and wacky tour of Music Town's rock and jazz clubs, music library, symphony, music school, and audio arcade. Fun for kids, too (Upcase Interactive; 415-494-1112; CD for Win, \$89.95).



Text, photos, videos, and tons of music combine to bring you the vibrant story of jazz in the interactive **Jazz: A Multimedia History** (Campton's NewMedia; 800-862-2206; CD for Win/Mac, \$89.95).



The pint-sized **Yamaha QR10** synthesizer packs a powerful punch—50 preset, prerecorded music tracks, 88 instrumental sounds, and 60 percussion sounds let even the tone-deaf compose stunning music (Yamaha Corporation of America; 800-233-7834; \$348).



Quite possibly the snazziest music software on the market, **MEGA Rock, Rap, 'n Roll** lets you mix and record your own party tunes using hundreds of prerecorded instrumental and vocal samples (Paramount Interactive; 408-541-3264; CD for Win/Mac, \$79.95).

Old Favorites

Even in the fast-moving world of computer games, there's still room for the classics.

For card players, **Hoyle Classic Card Games** offers eight popular choices from grown-up games such as Bridge, Hearts, and Cribbage to kiddie standbys such as Crazy Eights and Old Maid (Sierra On-Line; 800-743-7725; DOS/Win, \$49.95).



Serious bridge players will want a stronger program such as **Grand Slam Bridge II**, which features a variety of bidding, practice, and game play options (Electronic Arts; 800-245-4525; DOS, \$49.95).



People who like Scotch and soda better than bridge mix can indulge themselves with the **More Vegas Games** entertainment pack for Windows (New World Computing; 800-325-8898; Win, \$29.95).

The Miracle Piano Teaching System really works! This keyboard and 40-lesson software program will have you pounding out classical, jazz, and pop pieces in double time (Software Toolworks; 800-234-3088; DOS, \$479.95; Mac, \$489.95).



Poker purists can save a bundle practicing seven-card stud with the budget-priced **Ruckus Poker** (Vixen Crespo Software; 708-433-0500; DOS, \$12.95).

Lyric Crosswords Premium Edition gives word-gamers 250 puzzles at a variety of levels (Lyric International; 800-433-4464; DOS, \$39.95).



And every game library needs **Tetriz**, the Russian-invented falling-block game that has become a favorite around the world. Although the original has spawned lots of variations, **Tetriz Classic** delivers the authentic experience (Spectrum Holobyte; 800-695-4263; DOS/Win, \$44.95).

Chess buffs will want **Kasparov's Gambit**, a powerful and flexible program enhanced with live-action video coaching from the world's top player (Electronic Arts; 800-245-4525; DOS, \$59.95).



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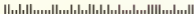
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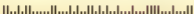
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The future of electronic entertainment is taking place now. Video and computing are rapidly merging into a new form, with an entirely new face. And that form is taking evolutionary, revolutionary leaps from what has come before.

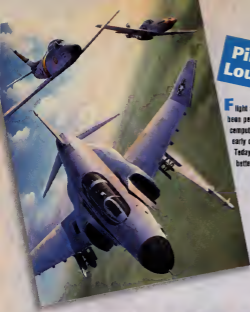
So how do you keep up with a computer game, interactive TV, CD-ROM and

multimedia entertainment entity that is evolving at the speed of light? You don't unless you stay on top of it. And that's our job.

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because we tell it like it is, right here and right now. We're their guide to today's hottest games, multimedia and tomorrow's newest technology because we're not about philosophy, we're about facts... the hard ones.

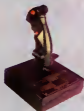
**The future begins now.
Don't be left out.**



Pilot's Lounge

Flight simulators have been popular on personal computers since the early days of PCs. Today's entries are better than ever.

For Mac owners who long to soar, **Chuck Yeager's Air Combat** is your only real option. Just type your dream—or night-mare—into the scenario editor, and you can track down some bogies (Electronic Arts; 800-245-4525; Mac, \$99.95).



Desktop jet jocks can improve their flying with the **Flight Control System**. A great touch, four well-positioned buttons, and a four-way "hat" subswitch provide easy access to controls when things get ugly (Thrust-Master; 503-639-3200; PC/Mac, \$99.95).



Things can get ugly fast in **Falcon 3.0**. This one has all the depth the dedicated simulator junkie demands, but its "Instant Action" option doesn't target the "I want to play NOW!" crowd, either (Spectrum Hobby; 800-695-4293; DOS, \$79.95).



Want to play Star Wars? Jump into a rebel **X-Wing** fighter and strike back at the Empire (LucasArts Entertainment; 800-782-7927; DOS, \$89.95).



And if you're tired of saving the world by turning chunks of it into smoldering holes, relax with a scenic trip in **Microsoft's Flight Simulator 5.0**, the latest incarnation of flight simulator's grand old man (Microsoft; 800-426-9400; DOS, \$64.95).

Play Hard

Whether the game is golf or world war, the competition is just as much fun and a lot less messy on the computer.



Stick out that tongue! **Michael Jordan in Flight** offers you what might be your last chance to be like Mike (Electronic Arts; 800-245-4525; DOS, \$59.95).



Forget high green fees and waiting for your day off. **Links 360 Pro** lets you tee off anytime on tenuous courses around the world (Access Software; 800-600-4880; DOS, \$69.95). Or try the Windows version, **Microsoft Golf** (Microsoft; 800-426-9400; Win, \$64.95). And for less than the price of a round at a fancy course, add-on disks let you play **Championship Courses** from the Betty in England to Pebble Beach in California. New add-ons hit the shelves every eight weeks (DOS/Win, \$29.95).

Hit the Road

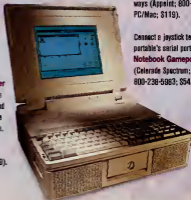
Most laptop and notebook computers lack the oomph to run games right. But with a new multimedia portable system or even a few choice accessories, that hering busness trip can be an excuse to play.



Replace your notebook's awkward trackball with the all-terrain **Gulliver** mouse. It works anywhere and everywhere, even on your leg, upside down and sideways (Appoint; 800-448-1164; PC/Mac, \$119).

Connect a joystick to your portable's serial port with the **Notebook Gameport** (Celebrate Spectrum; 800-238-5983; \$54.95).

Starting from scratch? The **Toshiba T6600C/CD Mobile Multimedia Computer** packs a color screen, a CD-ROM player, a sound card, and speakers into an 18.7 pound package. (Toshiba America Information Systems; 800-334-3445; \$2,299).



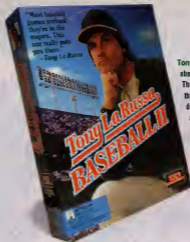


If world domination's your game, **Empire Deluxe** sends you off to war against the computer or fellow gamers using intensity, bombers, or battleships (New World Computing; 800-325-8898; DOS/Win/Mac, \$59.95).



Win one for the gipper with **Front Page Sports: Football Pro**. You're the quarterback, the coach, or the owner and general manager. A thousand built-in plays and in-your-face touchdowns make it almost as good as being there (Dynamic; 800-326-8654; DOS, \$79.95).

June 6, 1944: D-Day! **V for Victory: Gold, Juno, Sword** lets you control strategy and tactics from both sides of the beach (Three-Body Pacific; 800-693-1366; DOS/Mac, \$59.95).



Tony La Russa Baseball II has just about everything for baseball fans. There's even a time-travel option that lets you create your historical dream teams. Expansion disk available (Strategic Simulations; 800-245-4525; DOS, \$59.95; CD for DOS, \$70).

Millionaire's Club

Sometimes, only sheer extravagance will do the trick. Any one of those items is sure to impress a Rockefeller, a Kennedy, or even a Gates.



Run the wires out to a pair of **WAMM Series VII** speakers, and your PC will sing as sweetly as the London Philharmonic on a good night. Of course, hiring the symphony might be cheaper (Wilson Audio Specialties; 801-377-2233; \$125,000).



Computer sound is constantly improving, and most sound cards need help delivering true high fidelity. Boost their output with **Krell's KSA-200S** audiophile amplifier (Krell Industries; 203-874-3133; \$6,900).



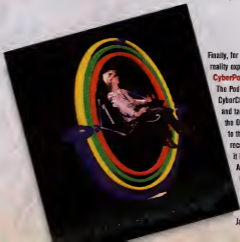
Besides looking really cool, the **Dolch MACH** multimedia portable is incredibly fast. With a rugged magnesium case surrounding a complete multimedia system, including double-speed CD-ROM drive, sound card, and speakers, it won't even blink if you spill your coffee on it (Dolch Computer Systems; 408-957-6575; \$11,295).



Give any system extra CD-ROM power with the quad-speed **DRM-604X CD-ROM Minichanger**. It swaps up to six discs at a time (Pioneer Hi-Fi Media Technologies; 410-952-2111; PC/Mac, \$1,845).



Hardly an instantatic, the top-of-the-line **Kodak DCS 200 Professional Digital Camera** snaps high-resolution, professional-quality photos that you can view and edit on your computer (Kodak; 800-242-2424; PC/Mac, \$9,995).



Finally, for the ultimate virtual reality experience, get a **CyberPod** in your roc room. The Pod includes the CyberChair for sight, sound, and tactile simulation, while the Orbtron adds motion to the equation. Voice recognition lets you tell it how you want it (RPI Advanced Technology Group; 415-495-5671; \$55,000).

Real Ordinary



There's more to games than a mouth that sort of moves or tinny sound. Now play PC games and feel just like you're sitting in a theater controlling the action with your joystick.

It's ReelMagic™, the new MPEG playback adapter from Sigma Designs.

ReelMagic™



Get the full-blown multimedia kit, or spring for just the board if you already have the rest of the gear.

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scenarios. ReelMagic pumps up the reality meter so you can crank up the fantasy.

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It's not real unless it's ReelMagic. Call 1-800-845-8086 ext. 314 for a dealer demo near you. Or you can stick with real ordinary. Oh joy!



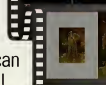
256 VS. 32,768 COLORS Why settle for a mere 256 colors, offered by current PC games, when ReelMagic gives you theater-quality graphics with over 32,000?



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how i made my



computer croon

■ MULTIMANIAC ■

the first installment in a continuing multimedia saga

THE 7 P.M. CROSS SOUND FERRY FROM Long Island to Connecticut used to be among the most idyllic commutes around. You could sit back, sip a gin-and-tonic, and watch the sunset as the world crept by at 12 knots. The trip was always a delight.

Not anymore. Multimedia has come to the Cross Sound Ferry—in the ugly form of a talking tourist information kiosk smack dab in the middle of the main lounge. And this one not only talks, it sings. Off key. And it plays bad music. Worst of all, it beeps.

And since no one, it seems, can resist the allure of its glowing touch screen, the thing does its miserable beeping routine every 10 seconds for the entire hour and a half. The sunset turns ugly, the gin tastes foul, and the trip becomes a nightmare.

PC and Quiet

Like a lot of people, I despise random electronic assaults on my senses. So why was I spending \$500 to turn my PC into a multimedia talking machine?

It was lust. Gadget lust. The same unassuageable ache that spawned millions of Sharper Image catalogues. You'd think that after a decade in the PC industry I'd have built up an immunity, but no. I could only hear so much about double-speed CD-ROM drives, fancy sound cards, and PC speakers before I had to have them.

I just knew a multimedia PC would make my life better. A CD-ROM drive would get me invited to better parties. A sound card would make my hair more manageable. Quality PC speakers would make me rich and famous.

Hypocrisy? Not on your life. I needed this stuff. So, armed with \$500 that I'd otherwise have blown on food or rent, I went out and got it. All of it.

My Multimedia Reality

Now, as I sit here, my formerly almost-mute computer—equipped with a CD-ROM drive, sound board, and speakers—is showing off an impressive new trick, serenading me with the bittersweet tones of Dexter Gordon's tenor sax playing "Soul Sister" from the Blue Note release *Dexter Calling*. I guess that's not really such a new trick—the recording was cut in 1961—but it's a big improvement over the random groans and beeps that used to constitute my PC's sole vocabulary.

And who would have thought that \$500 worth of hardware could transform a PC into Humphrey Bogart? But thanks to a few digitized wave (that's .WAV) files I downloaded from CompuServe, Windows now starts its day by murmuring, "Louie, I think this is the beginning of a beautiful friendship." When it shuts down, I hear Bogie's classic farewell to Ingrid Bergman: "We'll always have Paris."

And in between, even before I run out and buy a selection of the latest and greatest games, I can load up some of the fabulously useful CD-ROM discs that I've collected over the years. I can browse through the Guinness Multimedia Disc of Records and view the Hindenburg disaster, complete with the famous radio narration ("Oh the humanity!"). Meanwhile, the New Grolier

by paul bonner

PHOTOGRAPH BY MARK ALDREZ



Multimedia Encyclopedia lets me see and hear Mahatma Gandhi (yes, he did look and sound just like Ben Kingsley) or even listen to a

recording of George Washington's farewell speech (I'll be damned if I can figure out where they got that clip).

Okay, maybe my hair is still unmanageable and maybe I'm not rich yet, but I've at least proven to myself that not all multimedia is the devil's work. And, surprise, surprise, it was actually fairly easy to turn my aging 386 workhorse into a state-of-the-art (or close enough) multimedia machine. Here's how I did it.

The Tough Go Shopping

First, a confession: I wasn't exactly a virgin when I started my quest. I already had a pretty nice little sound card—a Media Vision Pro AudioSpectrum board that I'd reviewed a while back.

The Pro AudioSpectrum comes complete with a MIDI music port, a 22-voice synthesizer, an analog mixer, stereo digital recording and playback capabilities, and, most important, a SCSI port for connecting a CD-ROM drive. Having the board on hand simplified my task—and also saved me the \$170 or so that most mail-order houses ask for it.

Just to make sure that I would be able to take full advantage of the card, I downloaded the latest version of its software drivers—including a Windows-based mixer, recorder, and audio-CD player—from Media Vision's forum on CompuServe.

That left just two holes in my multimedia starter system: a CD-ROM drive to connect to the SCSI port and some speakers.

I went for the CD-ROM drive first, figuring it was best to get the big-ticket item out of the way. I wanted the most advanced drive I could get that would still leave room for speakers in my self-imposed \$500 budget. I'd already witnessed the tragic obsolescence of my first CD-ROM drive—an ancient Sony CDU-6100 that didn't include audio capabilities and that was so slow it would have had trouble passing a reading test for third-graders. It now holds up my bookshelf.

I didn't want to see the same fate befall my new drive, so I hit the mail-order ads. I figured I needed a double-speed, Photo CD-

compatible, MPC II-compliant drive. The latest-model NECs and Toshibas looked great, but their prices would have blown my scrawny budget. Then I happened across an ad for the Texel 3024, an internal drive with a fast 300K-per-second transfer rate and 265ms access speed, a SCSI-2 interface for the sound card, and a 64K buffer. ComputAbility (a Milwaukee-based mail-order outfit) was selling it for just \$369, plus \$35 for a cable/driver kit to connect to the Pro AudioSpectrum card.

It seemed like a great deal, but there was a catch: My PC, already equipped with two floppies and a tape drive, was clean out of internal bays. Unless I wanted to shell out another \$80 for an external drive, something had to go. After about three seconds of agonized deliberation, I decided that 5.25-inch floppies were passé, recited my charge card number, and ordered the internal model.

While I was on the phone, I noticed that ComputAbility was also offering the Altec Lansing ACS-50 amplified speaker system for a mere \$75. The ACS-50 may not be the most advanced system in the world (its amp delivers a meek 4.5 watts per channel), but it did meet my prime requirement: it didn't need batteries. Imagine the embarrassment if my speaker batteries died in the middle of "Ride of the Valkyries," and you'll understand why I insisted on an AC-powered system.

Best of all, the ACS-50 comes with three genuine Velcro patches for attaching the speakers and amplifier unit to my monitor—who could pass up an opportunity like that? Smart shopper that I am, I instructed the sales clerk to add the ACS-50 to my order.

It's in the Manual, Stupid

A few days and a mere \$507.45 later (the price included rush shipment charges—gadget lust doesn't wait for UPS ground), my multimedia future arrived. After a moment of silence to mourn the passing of an era, I removed the 5.25-inch floppy drive from my PC and put it to work helping the old Sony drive hold up my bookshelf. I slid the CD-ROM drive into the now-vacant floppy disk bay, installed the Pro AudioSpectrum

card in an empty expansion slot, and connected the cables. Then I plugged the ACS-50 speaker cable into the back of the sound card, booted up my system, and sat back to enjoy an audio feast.

Instead, I got silence, occasionally interrupted by loud burps from the ACS-50s. My first desperate thought was that the Pro AudioSpectrum's default setup might not work on my system and that I'd have to engage in endless experimentation to find the IRQ and DMA channel settings to make the card talk to my PC. But before panicking completely, I decided that maybe I ought to look at the documentation.

As it turned out, not only had I connected the audio cable from the CD-ROM drive to the internal speaker connector on the sound card, but I'd also plugged the speakers into the microphone port on the back of the card. (Note to Media Vision: how about labeling this stuff?) So I tugged everything out, plugged it back in, restarted my PC, and what do you know? It worked.

And it sounded awfully good—impressive results for a process that wasn't much more difficult than installing a modem. In fact, if you've ever installed anything in a PC you could do it—and if you read the manual, you'll probably do it right the first time.

In the days that followed, I've grown to love my new toys. Once again, gadget lust has led me to a place that's full of surprises. Beyond the music, beyond the Multimedia Encyclopedia and the fancy game software, there have been such treats as the "rugged manual eject mechanism" on the Texel drive.

Rugged indeed. The first time I hit the eject button, it launched my CD across the room.


But the best thing about my new multimedia system is the little on/off switch on the ACS-50 speaker system, which delivers precious silence at the touch of a button. And that's the big difference between that bleeping beeping box on the Cross Sound Ferry and my multimedia PC: I'm in control.

Before this silence thing gets out of hand, though, I'm going to take advantage of the MIDI port on the Pro AudioSpectrum card and have my PC teach me to play music. Tell you all about it next month.



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Myst

By Bob Lindstrom

If you haven't seen Brøderbund's new *Myst*, you owe it to yourself to check out this masterpiece. Available for the Mac and scheduled for a PC release this winter, *Myst*'s gorgeous 3-D graphics and haunting

soundtrack make it one of the most compelling games on the market today.

Myst comes from cult-hero designers Rand and Robyn Miller, the people who brought us the groundbreaking games *Manhole* and *Cosmic Osmo*.

That's where the Millers pioneered taking advantage of CD-ROM's huge storage capacity to offer players large and detailed fantasy-lands. You could click animations to life and explore those imaginary worlds in exhaustive detail. The only trouble with them was that you couldn't win or lose. *Manhole* and *Cosmic Osmo* were entertaining journeys, but they were basically aimless.

Landscapes to Die For

In *Myst*, the Miller brothers have figured out how to turn their unique approach to interactive entertainment into an engrossing, challenging game. With amazing 3-D rendered graphics, QuickTime video, and wall-to-wall digitized audio, *Myst* pushes the technological envelope for Mac-based CD-ROM games. The interlocking worlds and ages of *Myst* are vast and filled with visually breathtaking landscapes and imagery. It feels as though you're walking through a painting, except for the digitized video and effects that seem to pop up around every corner. And the canny blend of new age music and environmental sounds makes *Myst* one of the few games with audio that enhances its impact rather than intruding on the player's concentration.

The Anti-Cliché

Myst also pushes the design envelope by combining traditional gaming elements in a unique interactive experience. An intelligent story line, mind-bending puzzles, and adventure-game intrigue combine with *Myst*'s rich and atmospheric detail to produce a game that is at once fresh and familiar.

That freshness begins with its plot. Most computer games seem to be written by people who have attended too many screenings of *Alien*, *Star Wars*, and *Raiders of the Lost Ark* or read too many paperback sword-and-sorcery novels. That's certainly not the case with *Myst*'s ingenious mixture of science fantasy and fairy tale.

The game begins as you find yourself dropped down on *Myst* Island. And all you know is what you see: a small, craggy island dotted with monumental structures ranging from a clock tower to garden sculptures. There are no screens to explain what's going on—you are entirely dependent on the sights and sounds around you.

Exploring and collecting a few clues around the island paths gradually fill in some facts. The island was created by Atrus, a man who discovered the secret of writing books that create worlds and transport people from one world to another. But Atrus, his wife Catherine, and their sons, are not to be found on *Myst*. Apparently, a plot against Atrus has left his island and his worlds uninhabited. Your challenge: To uncover the story of *Myst* and find Atrus and his family.

As you roam Atrus's numerous surreal worlds in search of clues to the mystery, you'll find that exploring *Myst* involves much more than just



Book



Garden



Hallway



InMaze

traipsing about and mapping the landscape. To journey between worlds, you've got to solve the puzzles so ingeniously integrated into Myst's surroundings. There are secret elevators, concealed passageways, underground mazes, complex hydraulic systems, and other traps and machinery you must overcome to gain knowledge.

Myst's puzzles are excellent and brilliantly tied in to the overall context of the game. Unlike in that other CD-ROM masterpiece, Virgin Software's 7th Guest, Myst's puzzles don't feel shoe-horned into the environment. Each is an outgrowth of Atrus's imagination and centers on a solid, logical solution. Further, the Miller brothers have balanced the puzzles superbly to maximize their challenge and minimize their frustration. Even the thorniest problem has you teetering on the edge of success and, therefore, encouraged to return again and again until it is solved.

Exquisite Sights And Sounds

The sheer visual beauty of Myst compels you to continue forward, finding mind-boggling sights with the solution to each puzzle and the discovery of each new world. The creative team painstakingly modeled Myst's worlds in 3-D computer graphics, then rendered them in exquisite detail.

Unfortunately, Myst doesn't have animated transitions between locations. Instead of smoothly moving forward, the game digitally dissolves from one single-frame location still to another. Those who have enjoyed the cinematic motion of The 7th Guest may be disappointed in Myst's slide show-like transitions. But the game's graphic spectacle more than makes up for its lack of continuous motion.

For less powerful Mac systems—or for occasions when you feel like leaping through the landscape—the game provides slower and faster movement by adding or eliminating the graphic transitions between scenes. A zip mode lets you rapidly

jump between key points in the game.

QuickTime video is used wisely (and sparingly) throughout. At one point, the player is confronted with a video of a human being trapped in a most unusual place, the image provocatively flickering in and out for a few seconds like an ill-tuned television. And the underground maze also uses QuickTime video to transport you through shadowy tunnels in completely smooth movement.

The Grand Illusion

Finally, the illusion of Myst is completed by the wonderful audio track. Rarely has sound contributed so tellingly to the atmosphere of a game. Instead of droning, predictable music, Myst features subtle noises of wind, water, and machinery interspersed with a well-composed soundtrack.

Documentation for Myst is sparse but useful, explaining how to use the minimal interface and save multiple games in progress, as well as giving a little dramatic background on the story. A QuickTime movie on the making of Myst offers insight into its development.

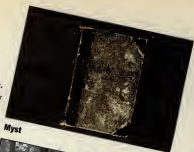
Myst for the Mac is unquestionably among the most revolutionary games shipped in 1993, and the PC version is sure to be a stunner as well. I particularly recommend it to people who have been intrigued by computer games but have never found a product with enough imagination and play value to maintain their interest. They will find Myst irresistible.

GAME-WINNING TIPS

There is an important link between the map in the library and the hidden tower.

Interact with the environment: Find and throw switches that can be found around Myst Island.

The valves in front of the tower clock do not control water level. Instead they control something quite different, but you'll need a tower clue to use them properly.



Myst



Village



Waterworld



Broderbund Software, 500 Redwood Blvd., P.O. Box 6121, Novato, CA 94948-6121; 800-521-6263; 8-bit 256-color Macintosh, 4MB RAM; hard disk with 4MB free space; CD-ROM drive; System 7.0.1 or later; Windows version scheduled for availability later this winter; \$59.95

Dark Sun: Shattered Lands

By Peter Olafson



This game puts you in deep trouble right from the start.



Some RPG customs die hard—like looting the dead.



This isn't a three-to-one melee. Sometimes a whole party is represented by one figure—until the battle starts

Worn thin over nine Advanced Dungeon & Dragons games in three series and finally entombed in a construction kit, it was inevitable that SSI's venerable "Gold Box" role-playing engine would be revealed at length as gold plate. The king is dead, long live the new one.

The new king is Dark Sun: Shattered Lands—the heavily financed, and long-awaited engine for a whole new line of games set in TSR's desert world. It's a hard place ruled by sorcerer-kings who get up on the wrong side of bed every day.

Was it worth the wait? In most respects, yes. Dark Sun is, for SSI, something quite out of the ordinary. The company has clearly been listening to its audience.

Gleaming Gargoyles

The game opens with your little band in gladiatorial combat against a nasty menagerie of monsters. As usual, you begin the adventure in trouble up to your neck. And things get worse before they get better.

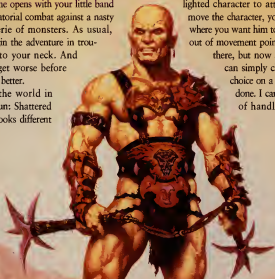
But the world in Dark Sun: Shattered Lands looks different

from the one in earlier SSI games. The graphics have a thick and lustrous presence, the gargoyles atop the walls seem to be right beside your face, and the church spire point of view is reminiscent of Virgin's Conan the Cimmerian. Spells go off like bombs, and no two look alike.

It's hard to describe Shattered Lands without comparing it to SSI's older products. To begin with, there's far less direction from a script. In the opening segment in the slave pens, for instance, you can either hang around the arena to become darlings of the audience; do in a strategically placed guard and then search for an exit; or ask nosy questions until you find a secret way into the sewers. (And if you told me there were other routes, I'd believe you.)

Nosy questions are the order of the day in Dark Sun. And there's far more character interaction than I've come to expect from SSI. People talk to each other a lot, questions lead to other questions, and who you know may matter as much as or more than who you kill.

And Dark Sun feels different. Gone is the perpetual wrestling match-cum-database that was the "Gold Box" interface. This is by far the easiest of the AD&D games to control. During combat, all you do is click on the creature you want the highlighted character to attack, and it's done. To move the character, you just click on the spot where you want him to go. And when you run out of movement points—oh, yes, they're still there, but now at a safe distance—you can simply click on the appropriate choice on a pop-up menu and that's done. I can't imagine a better way of handling it—although I do



wish I had the option of taking a fallen enemy's inventory and moving it into my own.

Stylish But Safe

Different as it is, *Dark Sun: Shattered Lands* is very much anchored in the comfortable and familiar. I can just imagine the designers going over what's worked best before and incorporating it into this new title:

"Maybe *Shadow Sorcerer* didn't seize their hearts and minds, but the perspective was sweet, wasn't it?"

"Yes, combat in the 'Gold Box' games was laborious and the animation primitive, but wouldn't it be something if we could really animate the characters and make the control system intuitive?"

"Sure, and what about using the point-and-click inventory system from *Eye of the Beholder*?"

In terms of features, *Dark Sun* makes all the right moves. The years in development show. My only quibble is a slight discomfort with the ability to scroll the play field and preview whole regions beyond one's vision.

Okay. Now that I've said how well SSI listened, I have to make the hard admission: I didn't quite connect with this game on a visceral level. *Dark Sun* is different for SSI, but not for the industry. No ground is broken here.

But maybe I'm just a victim of a long wait, but after so much time, money, and press, I expected a genuine departure—the way *Ultima VI* ran away from the shadow of *Ultima V*. Instead, I got an intriguing, stylish, but essentially safe amalgam.

Fact is, *Dark Sun* probably would have been a

lot more impressive about a year ago, when it would have gone up against the likes of *Ultima VII*. The window of opportunity is smaller now; it will be competing with a revolutionary *Ultima VIII*, and I can't help but feel that, a year or so down the road, SSI is going to be looking for yet another game engine just to keep pace.

Nevertheless, this is a very good game, and I have no doubt that we'll all have a great time exploring the ins and outs of this enormous, beautiful, and untethered world. SSI is already planning a follow-up: *Dark Sun* is only the first game in a trilogy. This isn't gold plate. This isn't tin. It's the real thing—with a bit of tarnish.

GAME-WINNING TIPS

In the beginning, keep your smart mouth shut to stop the endless stream of monsters.

The clock isn't running, so explore to your heart's content. You're likely to find something unexpected.

Ask questions first, shoot later.

1	2	3	4	5	6	7	8	9	10
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Strategic Simulations Inc., 675 Alhambra Ave., Suite 201, Sunnyvale, CA 94086-2901; 800-245-4525; PC, 16MHz 386 or faster; 640K RAM (2MB recommended); hard disk with 20MB free space; DOS 3.3 or later; supports AdLib, AdLib Gold, Sound Blaster, Sound Blaster Pro, Pro AudioSpectrum, and Roland sound boards; mouse recommended; CD-ROM required; \$79.95



There are plenty of opportunities to improve your interpersonal communication skills.



Dark Sun's auto-mapper hasn't gone too far.



You've managed to bully the poor oaf on the left into taking you to his leader, but you're not keeping up very well.



Gateway II: Homeworld

By Peter Olafson

The original Gateway was almost a little miracle: an adventure so rich in excitement, dense in detail and varied in approach that it felt nothing like a text and graphics adventure. It was more like being in a wordy role-playing game, and a very nice one at that.

But a miracle is always a tough act to follow, which is why fans of the original game will be pleased to learn that Gateway's unabashed sense of fun and exploration remains happily intact in Gateway II: Homeworld. For a text adventure, Gateway II is positively dynamic.

Clench Your Fists

Fifty million dollars richer for surviving the first game, you're now a consultant on a mission to save Mankind As We Know It from a sordid holocaust of fire and destruction. And through a set of somewhat predictable circumstances, you find yourself bound for an enormous alien artifact that has appeared near the orbit of Pluto. This artifact proves to be just a drop in the intergalactic bucket.

Text-based adventure games typically move like snails on salt—and all those typos and puzzles can get tiresome. Not this one. Gateway II has a certain fierceness to its pace. Some parts of it, in fact, have the breakneck speed of an action game. And I tore through them as though I were being pursued, which, invariably, I was. Inside a compromised base on Earth, listening to the enemy's intercut radio transmissions over a captured walkie-talkie, I played with my fists clenched. And in the command chair of the artifact-bound ship, I crossed my fingers tightly, hoping that the troops I'd just cut off wouldn't reach the control pad in time to blow it

GAME-WINNING TIPS

Don't ignore the consoles. They generally have something interesting to say.

An oddity from Legend's own hint book: If you treat Diana's infection before you counteract the poison, you can end up with 15 points more than the maximum of 1600.

Where the auto-mapper is turned off, follow the water!

Turn on the switch at the top left when you reach the Inducer between the second and third zoos.

out of the sky. What an intensely physical game!

The game engine falls away and leaves you alone to play, which is just as it should be. With this fast-paced, quick-witted adventure, Legend has finally justified its point-and-click interface.

The catch to this dynamic pacing is that it comes at the expense of the game's difficulty. Because most of the puzzles are rational, solutions are rarely more than a few steps away. For instance, when you're up a fruit tree with three hungry lizards waiting below, it makes sense to pelt them with fruit. When a red force field blocks a door, it's a fair bet the red crystal rod in your pocket holds the key to safe passage. An exception is the lengthy trial-and-error process you must use to teach yourself how to operate a number of curious alien machines. Succeeding at this is enormously satisfying.

Gateway II's easier game play may lead some text-adventure experts to scoff at it as lightweight. Beginners will think it's great. Anyway you look at it, Gateway II is great fun, and it's different. The pace, the infectious excitement, and the sense of anticipation and fear that runs through much of the game are priceless. I feel like playing Gateway II again, and I can't recall any text adventure I've wanted to play more than once. More of this, please.

1 2 3 4 5 6 7 8 9 10

Legend Entertainment Company, P.O. Box 10810, 14200 Park Meadow Dr., Chantilly, VA 22021; 800-658-8891; PC; 640K RAM; hard disk with 8MB free space; DOS 3.3 or later; supports AdLib, Roland MT-32 with MPU-401-compatible interface, and Sound Blaster sound boards; mouse recommended; \$59.95



You're lounging around at home when the call for help comes in. (Not too fussy about decor, are you?)



You'll need to impress the chief with your killing instinct in this particular zoo.



Here's an odd-looking alien machine. Do you suppose that console might help start it up?



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The Silver Seed

By Barry Brenesal

Remember Britannia's Avatar, that hero, that paragon of virtue? Last time we checked, he was battling to restore balance between Chaos and Order on the Serpent Isle (Ultima VII, Part 2). Chaos was winning out; disease and slaughter were common. In the new Serpent Isle add-on module, The Silver Seed, the situation is reversed. The Avatar and his buddies have gone back in time to an era when Order threatens the balance. Intolerance and repression are everywhere. Your man is the only one who can save the day.

If your Avatar succeeds, not only will you have helped save the planet—admirable in and of itself—but you'll return to the Serpent Isle with some neat magical devices. For instance, there's a Belt of Strength that acts like a permanent steroid boost; a Helm of Light that gathers together more than 50 keys from the Serpent Isle and automatically uses the right one every time you need to open a lock. This is a remarkable instance of an artifact from the past becoming a modern-day gaming bugfix.

Sizzling Hotkeys

If you like the game's artifacts, you'll love its hotkeys, which also become accessible in Serpent Isle. Origin Systems has added an *f*-key that lets you feed adventurers without manually double-clicking a roast beef in somebody's backpack first. Pressing *p* lets you automatically apply lockpicks if you've got them in your inventory. *W* brings up the time of day.

There isn't much physical territory to explore in the Silver Seed—remember, this is an add-on module, and you'll have more than enough to keep you busy for months on Serpent Isle. Seed's quests are more in the nature of dungeon gauntlets you have to run and survive in the immediate vicinity of Seriss Keep. There is some built-in variety, but not much. You'll need to avoid a few traps, battle plenty of monsters, and search for disguised passageways.

Combat-oriented players will be delighted with Silver Seed's no-nonsense approach, and the

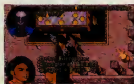
graphics are up to Origin Systems' usual excellent standard. But if you enjoy the wealth of animation and character interaction generally associated with Britannia, Silver Seed may seem a trifle flat.

Jumping in Early

Is the module worth the price of admission? Provided you jump into it early from Serpent Isle,

I'd say yes—less for the experience your characters build than for the bonuses you'll take away. Serpent Isle is a very long game in which small nuisances can turn into major annoyances over time. Players need all the advantages they can get.

Silver Seed's hotkeys, key ring, and Helm of Light make Serpent Isle much more playable without giving anything away. They enhance the value of the original product. You'll have to agree that life in Britannia becomes a lot more interesting when you aren't constantly looking for another torch in the dark.



Dialogue is extremely important in Silver Seed, as you interview a whole new group of friends and enemies.



The Silver Seed is the ultimate in object-oriented games because literally everything you see can be picked up and used.

GAME-WINNING TIPS

The glowing Serpent swords you'll find everywhere aren't that great. An ordinary whip does the same damage and has a longer reach.

Elissa the Mage never stops producing potions. Grab each potion as she puts it on the workbench; otherwise, it gets recycled.

The documentation recommends blowing up a debris-blocked corridor in the Abandoned Fortress to reach a stairwell. Don't bother: Just hit the debris in combat mode with any hand-to-hand weapon.

Train your Avatar in martial arts. There will be a dungeon on Serpent Isle where he temporarily loses everything, including his artifacts, and he'll need good combat skills to survive.

1 2 3 4 5 6 7 8 9 10

Origin Systems, 12940 Research Blvd., Austin, TX 78750; 800-245-4525; PC, 386SX or faster; 2MB RAM; hard disk with 4MB free space; DOS 3.3 or later; supports AdLib, MT-32/LAPC-1, Roland, and Sound Blaster sound boards; mouse required; Ultima VII, Part 2 (The Serpent Isle) required; \$29.95

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Ecco the Dolphin

By Wes Nihei

Ready to explore inner space? Ecco the Dolphin splashes onto the Sega CD in this epic underwater quest, and you get to dive right in.

As the story begins, Ecco's at play with his pod when a massive vortex scoops out a chunk of the ocean and all the other dolphins with it. You must take control of Ecco, reunite him with his friends, and get to the bottom of the vortex mystery.

If you've already taken a dip with Ecco on the Sega Genesis, you'll find these seas much richer: Five new levels and support for three-dimensional QSound juice up the underseas action. Those who have played both versions will find the game play a little easier in the CD version, but there's still plenty of challenge to keep you swimming.

Sink or Swim

Ecco's task in each of the 33 levels is to uncover the various clues hidden in the seascape. Mysterious crystalline structures called Glyphs hold the clues, and finding them tests your wits and Ecco's survival skills. Each time Ecco completes a level, he swims one step closer to his lost pod.

But first you've got to ferret out all the Glyphs on each level. You've got to explore nooks and crannies, negotiate mazes, and navigate around seemingly endless obstacles. And in addition to doing the underwater detective work, you must play a cunning game of survival of the fittest.

You'll do some fancy thumb pressing on the Genesis control pad to beat the sea beasts in this game. Ecco faces schools of natural and unnatural adversaries, but his primary offensive tactic is ... well, let's just call it a hard-nosed ram attack. Venomous sea snakes, stinging jellyfish, tricky octopi, and voracious sharks lead the predators eager to deep-six Ecco. And without revealing too many of the game's hidden pleasures, let's just say that neither time nor space limits the types of nautical nightmares he'll encounter.

For many, the highlight of this game is the stunning animation of Ecco himself. Sega animators used video footage of live dolphins to create their seagoing star. Ecco's realistic movements

beautifully capture the dolphin's physical grace and natural sense of freedom.

Ecco cuts through the oceans effortlessly as you send him slashing through the water at incredible speed. You can even have Ecco break the surface and soar into the air for acrobatic somersaults.

The rest of this disc's gorgeous graphics keep pace, presenting a realistic underwater menagerie complete with various species of fish and sharks, orcas, rays, and a host of seabed denizens such as crabs, shrimps, and anemones.

Coming Up for Air

Ecco has to chase down fishy sea life to regain lost energy, but it takes more than fresh sashimi to keep Ecco going. Like real dolphins, he needs oxygen. So when you guide him to the far depths of the ocean, you'd better keep an eye on the onscreen oxygen meter as it counts down. Make plans early to return to the surface or find one of the many undersea air pockets.

Another dolphin trait that plays a major role in Ecco is the innate ability to use echo-location to navigate and identify objects. Ecco uses his songs to communicate with other dolphins or occasionally to ward off skittish predators. Singing to the right characters also reveals important clues as they sing back.

And Ecco's songs are a perfect way to show off the reverberating effects of the QSound audio. Heard through a home stereo or a good set of headphones, Ecco's auditory experience rivals its visuals.

Ecco the Dolphin puts the sea in CD. It's an excellent game that brings the ocean to life, and you won't even get seasick. Ecco, like all dolphins, is a naturally lovable creature, and the game environment is rich, challenging, and full of surprises. Winning requires a satisfying mix of brains and brawn. Ecco the Dolphin is the deepest adventure game currently available for the Sega CD—and that's no fish story.

1 2 3 4 5 6 7 8 9 10

Sega of America, 255 Shoreline Dr., Suite 200, Redwood City, CA 94063; 800-872-7342; Sega CD required; \$49.99



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Circle 145 on Reader Service Card

Aces Over Europe

By Joe Hutsko

The scene is World War II, the air war in the European Theater. They're all here: the B-17G bomber, the P-51D Mustang, the shark-toothed B-26 Marauder, and, of course, the ubiquitous Me 109. The missions are many and the munitions are ready. So take a seat, grab the controls, and start flying *Aces Over Europe*.

Your first stop? Try the preflight vehicle viewer, where you study "parked" vehicles on both sides. The viewer's fantastic interface allows you to zoom in and around planes, ships, and ground vehicles for a closer look. Then it's on to the training missions, where you'll learn the skills necessary for winning historical missions.

The training mission that earned me the most frequent-flyer miles was "Dogfight a Famous Ace," which lets you go head-to-head against one of the war's greatest pilots. In addition to the thrill and challenge of going up

against a Galland, you see a digitized photo and career synopsis of each legendary fighter. Other training missions include escorting and protecting bombers on strikes, sinking enemy ships, assisting ground forces by destroying ground targets, and wiping out radar installations.

Dynamix's approach to customizing missions has always been excellent, and *Aces Over Europe* lived up to my expectations. As you're about to take off, a mission summary appears—click directly on a highlighted variable to change the parameters. Your Choices

include aircraft type, starting altitude, and cloud cover. There's also a "surprise" option, which lets you give the advantage of surprise to your own flight, the enemy flight, or no one.

Stratospheric Detail

Combat flight simulator pilots typically ask for it all: authentic instrumentation, responsive controls, historical realism, and superfast, supersharper graphics with plenty of detail both on the ground and in the air. And Dynamix has been listening—off and on. While *Red Baron* upped the ante on flight simulators, *Aces Over the Pacific*, Dynamix's second effort in the Great War planes series, failed to raise the stakes. But *Aces Over Europe* delivers the goods.

Responding to players' demands, Dynamix has added many improvements, including a better



A well-planned shot and it's hello terra firma.



Properly-executed bombing runs leave little standing.



You can take a closer look at your friends (and enemies) before you get airborne.

flight model, more accurate top speeds and climb rates, higher air detail, and more realistic stalls with spins of varying severity and difficulty (an often requested feature).

When you're ready to go airborne, you'll find all the usual controls: flight stick, rudder, throttle. And although most people agree that a joystick increases the realism, it's a testament to the quality of this program that I flew just fine using the keyboard alone.

If you got the blues playing *Aces Over the Pacific*, sandwiched between a double blue layer of sky and sea that offered little sense of orientation or motion, you'll snap out of it when you experience *Europe's* stratospheric attention to detail—assuming, of course, that your computer can handle it. At its highest settings, *Europe* offers easy-to-

identify landmarks and superior aircraft detail—where you'll half expect to see the enemy pilot grinning at you as he zooms in, guns blazing.

Customizable atmospheric realism is another of Aces Over Europe's strong points. The sun's glare had me squinting at my screen, trying to spot enemy aircraft through the disorienting white haze. Equally challenging was the weather option, which allows you to set up increasingly cloudy conditions on a sliding scale. Cloudy weather figured prominently into the air war over Europe.

There are also sliding scales that adjust the prevalence of gun jamming, engine burnout, limited fuel and ammunition, and blackouts, which occur from pulling excessive G's. The sounds you expect—droning engines, rat-tat-tat machine gun fire, and alert bells—are all nicely executed.

Flight Plan

For those of us who never studied aircraft navigation, there's the Flight Plan button. You can bring up a finely detailed flight and navigation map before or during flight, and the Flight Plan button

places, and things—go a long way toward making you feel more involved in the simulation.

The in-flight recorder is more than just a way to relive past glories. You can record a mission, replay it, and jump back in at any point in the action. This is a great way to try different strategies at crucial points without having to start over each time. Of course, the film room lets you observe the action from a variety of points of view.

The real challenge of Aces

Over Europe is to put your simulated life on the line by selecting the Career option and joining a historical squadron. An airbase menu displays important information about your squadron, such as plane types, location, and pilot dossiers. As a member of the squadron, you'll join in its successes and failures, flying several campaigns based on historical events. And it's not just

battle in the skies you have to contend with. There's plenty going on groundside, as well. Teletype communiqués from headquarters detailing major events, forced transfers for disbanded squadrons, even rumors from squad mechanics, who offer juicy gossip on enemy actions, useful tactics, and the latest news from the home front.

If you're skilled enough to survive, you'll see the war's end, and how your final ace status compares to other pilots. But whether you win the war or plow into the German countryside, you'll be rewarded with a great experience. Aces Over Europe scores a direct hit.

The sun's glare had me squinting, trying to spot the enemy.



GAME-WINNING TIPS

Save ammo! A few well-placed shots in the engines will disable your prey. Gravity will do the rest.

Beginners should disable engine burnouts and midair collisions.

Use "skip bombing" to take out a convoy. Come in head-on and drop your bombs in front of the lead vehicle to wreak major havoc.

On ground attack missions, split your squadron and attack multiple targets to gain more medals and higher scores.

Get rid of extra ordnance. If you've got bombs, you don't need, ditch 'em fast, or your aircraft's performance will suffer needlessly.

shows your route on demand, with assigned targets highlighted and accompanied by a close-up reconnaissance photo—a very nice touch.

The extensive 200-plus-page manual is also impressive. Besides operating instructions, it contains a concise and well-written history of the war and a thorough reference section on aircraft, flight, combat tactics, weapons and ordnance, vehicles, ships, and decorations and medals. Its authentic black-and-white photos—candid shots of people,



Dynamix, 1600 Millrace Dr., Eugene, OR 97403; 800-326-6654; PC, 25MHz 386 or faster; 2MB RAM; hard drive with 8MB free space; DOS 5.0 or later; supports all major sound cards with digitized speech; mouse and joystick recommended; \$69.95

SimFarm

By Richard Raucci

If you dream about leaving it all behind for the peaceful life in rural America, try *SimFarm* first. You'll find life on a farm anything but relaxing. You've got crops to grow, roads to build, farm machinery to buy—and that's just the beginning. Pests, weeds, water damage, drought, and soil exhaustion threaten your livelihood. And if you forget to feed your livestock on time, they'll smash through your fences and trample the fields.

As for the natural disasters you'll face, we've got good news and bad news. Tornadoes, frost, flood, drought, and locusts are in store. Nasty locusts descend and strip a field in seconds, and a tornado can destroy your equipment, machinery, and virtually anything else you've got. But the animation is so entertaining you'll almost look forward to these disasters. If you look closely at the tornado, you can even see an unfortunate cow twirling inside.

Down on the Farm

Based on the same game model as Maxis's popular *SimCity*, *SimFarm* is fun and infinitely playable. You begin the game by choosing an area on a U.S. map, or you can generate your own terrain by controlling wind velocity, rainfall, and temperature. You can even add a river or lake to your personalized plot of land. Once you have your region, you move on to the main Map, which gives you an overhead view of the terrain you've selected. Then turn to the Edit window, and get down to running your farm.

You'll plant your fields by selecting them from a left-hand crop palette—but don't forget to bulldoze any trees first. And sowing seeds is only a start—you need to build roads and buy machinery, barns, and silos so that you can harvest and store your crops. You can add drainage ditches, windmills, and pumps to ensure a fresh water supply. All the chemicals for farming are at your disposal, too—pesticides, herbicides, and fertilizers.

After you've gotten into the routine of running a farm and learned to cope with disasters, you'll start to expand. As your farm prospers and the neighboring town begins to grow, you can erect

new buildings. Build an airport, and you can buzz around in a crop duster to spray your fields.

The program offers several sources of

information for the *SimFarmer*. The Farm Bureau will advise you on crops, livestock, and machinery. The Evaluation window updates you on productivity and growth, providing a rundown of problems your farm is facing and suggesting the right crops for your soil.

Don't forget about earning money—when you left it all behind to be a farmer, you left your paycheck behind, too. A balance sheet helps you match expenditures to incoming cash and, if you run out, the bank is available to lend money. There's also an option that lets you speculate on crop futures—a risky way to raise cash. Don't take too many risks, or you'll face foreclosure.

If you decide to retire down on the *SimFarm*, here's some simple advice: Watch out for disasters, don't build too fast, and keep tabs on your cash flow. The reward for your careful husbandry and dedication to the bucolic life? An abundant harvest, of course. Call it hokey, but watching the waves of colorfully dressed workers harvesting your crop is incredibly gratifying—and a paean to your ingenious game play and hard work.

GAME-WINNING TIPS

After a flood, rebuild bridges while the water's still high. That way, they won't be washed out in the next flood.

Leave room for roads when you set your fields.

Crop rotation is a natural way to avoid depleting your soil.

Run out of gas in your crop duster, and you'll end up plowing your fields in a whole new way.

1 2 3 4 5 6 7 8 9 10



The Region Selection window offers predefined terrain for your farm.



A tornado can cause major damage. Fix fences first, before your livestock escape.



The Weather window shows you an overview of the weather conditions.



Maxis, 2 Theatre Square, Orinda, CA 94563-3346; 800-33-MAXIS; PC, 286 or faster; 640K RAM; hard disk with 3MB free space; DOS 3.1 or later; supports Ad Lib, Roland, and Sound Blaster sound boards; \$49.95



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Wing Commander Academy

By Bernie Yee

The Wing Commander juggernaut rolls on. While Wing Commander II's fanfare has long since been eclipsed by high-flying X-Wing, Origin is still working on both Wing Commander III and Privateer. And in the meantime, Origin has given Wing Commander fans something to play with—Wing Commander Academy.

A standalone game you can play without any previous Wing Commander experience, Academy lets you design and save your own missions. All the familiar Wing Commander II ships are here—from the lowly Ferret to the fearsome Jalkehi—with two additions: the Confederation Wraith and the Kiltrathi Jrathek. Both are the best of their respective fleets, with the edge going to the Confederation ship, as usual. Both ships carry new weapon systems, but the Kiltrathi technology is always less deadly than the Confederation counterparts; it makes you wonder why the war has continued for so long.

As usual, you can fly any of the Terran fighters in Wing Commander games, but you can only fly one of the Kiltrathi fighters, the Jrathek. As in Wing Commander II, flight mechanics are not space realistic. The best way to win any engagement is still to keep your wingman out of your way and use your thrusters to maneuver around your enemy. Graphics are still excellent, though they are hitmapped, making the ship resolution at close range very pixelated.

Unfortunately, Wing Commander Academy lacks what made Wing Commander I and II so compelling—the developing story line and sense of space opera. So while Wing Commander Academy may be designed as a standalone game, it won't convert many to the Wing Commander series.

Although Wing Commander Academy's digi-



The rear turret of your Sabre is one of the most useful weapons you have, and don't trust the computer to make best use of it.

tized voice, sound effects, and musical score, with branching themes to reflect the action, still sound great, Academy's lack of support for General MIDI as implemented in the next generation of sound boards is disappointing.

For all-out seamless action, LucasArts' X-Wing emerges as a superior solution—its polygon graphics system allows smooth, flowing movement that is unequaled. And while Wing Commander Academy's hardware requirements seem quite tame in comparison with Strike Commander's, this product still has the strange quirk of not having its game speed tied to the processor clock; believe it or not, it is far too fast on a 33MHz 486.

Wing Commander Academy is a temporary fix for Wing Commander fans while they wait for Wing Commander III and Privateer, which will, in all likelihood, be more carefully thought out. If you liked Wing Commander II, you'll get more of the same here, with missions of your own design to spice up the experience. If you're looking for a quantum leap forward in Confederate vs. Kiltrathi action, you'll have to wait a bit longer.

GAME-WINNING TIPS

Save missiles for the knockout blow.

Stealth fighters generally have little armor, weapons, or shields. Target fast, hit hard, and watch them detonate.

If your ship has a rear turret, use it. It will get an enemy off your six in a hurry.



Origin Systems, 12940 Research Blvd., Austin, TX 78750; 800-245-4525; PC, 386SX or faster; 2MB RAM; hard disk with 5MB free space; DOS 5.0 or later, supports AdLib, LAPC-1/MT32, Sound Blaster, and Roland sound boards; joystick and sound card recommended; \$49.95



The toughest fighter is the Confederation Wraith, but the artificial intelligence in Academy is no match for a good human pilot.



Wing Commander's trademark panoramic views are here again, so you can get a ringside seat on the action.

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Iron Helix

By Bob Lindstrom

Drew Pictures uses CD-ROM to spin some classic science fiction clichés into an intense interactive dilemma in *Iron Helix*, a space-jockey fun-fest from Spectrum HoloByte.

The plot twists here are all pretty familiar: a dead crew, a biological weapon of horrifying power, a spacecraft out of control, and only one person capable of saving the universe from viral



The video window is small, but the excellent graphics help suspend your disbelief.

genocide. In the best tradition of predictable science fiction, it's the vessel least capable of intercepting the plummeting spacecraft and destroying its deadly contents that receives the emergency beacon transmission.

Your mission is to send and remotely operate a zoological probe on the ship. It can't attack or defend itself, but it can tinker with the ship's computers. It can also gather samples of DNA from the decks of the multilevel ship. And everyone knows DNA comes in handy when seeking admission to high-security areas on runaway rockets.

The proper DNA samples will get you into every area of the ship. There you'll search for video messages that help you acquire computer codes to stop the impending doom. You'll also have to uncover a way to destroy the Defender robot, which is programmed to keep you from meddling. Finally, you'll need to find and execute the code that stops the ship. You have limited time to accomplish this goal, so you'll have to move at warp speed in the end game.



You control the probe as it moves through the corridors, trying to access high-security areas.

It's a slightly worn situation, but *Iron Helix* jolts it with photorealistic graphics and split-second timing. The onscreen display looks like a real probe control panel (if there were such a thing). The screen is divided into several sections: a vividly and smoothly animated 3-D video point of view from your probe; a scanner that looks for DNA samples; an electronic map that toggles between three schematics of the runaway ship's interior; and the controls that move your probe through the corridors and decks.

You Are There

Five levels of difficulty let amateurs enjoy the game while still challenging experienced probe pilots. Since games can be on the long side, you can save a game in progress. Best of all, with the combination of rendered computer graphics and digitized video animation, *Iron Helix* has that "you are there" 3-D look CD-ROM players expect.

GAME-WINNING TIPS

Make frequent use of the 3-D map to track your location.

Not all DNA is useful—choose your strands carefully.

At the higher difficulty levels, the yellow warning light offers little advance notice of danger.

In plot and play, *Iron Helix* is just another real-time puzzle in space, but it is presented with such flair and polish that you'll become thoroughly involved. The excitement will have you breathing heavily—and grateful for a little R&R after completing your compelling tour of duty.

1 2 3 4 5 6 7 8 9 10

Spectrum HoloByte, 2490 Mariner Square Loop, Alameda, CA 94501; 800-695-4263; 8-bit 256-color Macintosh; 4MB RAM (5MB recommended); CD-ROM drive; hard disk with 7MB free space, System 6.0.7 with 32-bit QuickDraw or System 7.0; \$99.95

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SEAL Team

By Wayne
Kawamoto

It's no wonder the Vietnam War inspires few computer games. Its legacy of pain and divisive po-

litical battles left deep scars. Even now, many people don't want to think about it.

But Vietnam is the setting for SEAL Team, and it's a successful effort by every account. This game places all the searing action in a first-person perspective: You're looking through the eyes of your team's point man.

Getting the Job Done

In SEAL Team, you lead a team of crack commandos on missions and campaigns through enemy territory. Your tasks may include patrolling, setting ambushes, destroying key structures, rescuing



SEAL Team features searing ground action that's set in the hellish jungles of Vietnam.

personnel, locating weapons, or even kidnapping high-ranking enemy officers. The game's flight-simulator style and sophisticated graphics effectively put you immediately into the ground action, and the game offers solid strategy

play with realistic circumstances. When all is said and done, you'll discover that 3-D war is hell—especially in the brutal jungles of Vietnam.

Before each mission, you're briefed on the type, location, area, terrain, weather conditions, and expected strength of the enemy. From your pool of soldiers, you choose the right men for the job. Keep in mind that you'll want to rotate your soldiers and give all of them experience. That way, when you lose a man, you can replace him with someone with comparable experience.

Depending on the mission, you allocate tools and weapons and assign positions. In SEAL Team, each position—such as Officer in Charge, Corpsman, or Rear Security Officer—performs a key function in the party. Tools include radios to maintain contact with your support forces and other members of your party, medical kits, and prisoner handling kits that let you take custody of the captured enemy.

Once you're in the target area, the game's 3-D graphics come into play and you experience the action through the eyes of your soldier. There are also several other



perspectives available. You can, for instance, select a full-team view.

How you move through the jungle is critical, and you can walk, crouch, or run to your objective. (Crouching makes you less vulnerable, but you can't move very fast.) When you crouch or stand, you'll see the graphics change perspective accordingly, and an onscreen compass shows the direction you're heading. If you want to see where you are, you can pull up a map screen to check your location relative to your waypoints and objective. As you move, watch out for the booby traps, which include trip wires loaded with explosives and punji sticks. When you spot a trap, expose it so that other members of your party can avoid it.

In some missions, it makes sense to split your party. Here you can assign waypoints for the others, along with movement and combat orders for sniping, demolition, providing cover fire, and searching. Throughout, you're not alone. Boat, helicopter, and aircraft support teams are just out of sight, ready to attack the enemy, extract your party, or take custody of your prisoners.

Grab Your Weapon

When you run into the enemy, choose your weapon and start giving orders. Your soldiers can fire only in their field of view, fire ahead at the point's target, or fire at will. (Onscreen, you'll see a shooting gun sight that, by its color, indicates the odds of hitting the enemy.) In SEAL Team you can only select targets; you don't actually aim. So the

combat portions aren't like shooting arcade games such as Taito's Operation Wolf. And, unlike in a role-playing game, you don't enter a discrete combat mode. You're still free to move towards your objective, under fire, if you wish—it's all real time.

You can also change the difficulty of the game so that you'll have a fighting chance in the beginning—unlimited ammunition and non-existent reload times will help you. In the long run, however, it's much better to capture prisoners to extract information on enemy movements and plans than to shoot them.

SEAL Team is an in-depth game that is complicated to play. It receives commands from the usual joystick, mouse, and keypad maneuvers, plus numerous single-letter commands from your keyboard. This game could definitely use a keyboard-mounted cheat sheet.

The polygon-fill graphics are adequate and look a lot like those you find in conventional PC flight simulators, though they don't fly quite as high as the graphics in Strike Commander or Comanche Maximum Overkill. Nor are the graphics the best first-person view when compared to those in Wolfenstein 3D or Ultima Underworld. Although they convey the action adequately, I wished the screens looked better.

Still, Electronic Arts gets high marks for an excellent game and for a groundbreaking innovation. We can safely say that there's nothing else like it on the market. This is the first "you are there" simulation for gritty ground warfare. If you love the smell of napalm in the morning, wake up with SEAL Team.



Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404; 800-245-4525; PC, 33MHz 386DX or faster; 2MB RAM; hard disk with 4MB of free space; DOS 3.3 or later; supports AdLib, AdLib Gold, Pro AudioSpectrum, Sound Blaster, Sound Blaster Pro, and Roland sound boards; \$59.95

This is the first "you are there" simulation for gritty ground warfare.



SEAL Team is a war game with a first-person perspective. Here you target the enemy in battle.



GAME-WINNING TIPS

Rotate your soldiers! Keep a corps of experienced backups ready.

Use the terrain to your advantage to sneak up on the enemy.

Move slowly (and quietly!) towards the objective so you don't alert the enemy.

Reinserting your team can work to your advantage by putting you in areas where the enemy hasn't anticipated your arrival.

Use time compression sparingly. If you're attacked, it can be devastating.

V For Victory: Gold, Juno, Sword

By Ed Ferrell



Gold, Juno, Sword: These were the code names for the British beachheads in the D-Day invasion, and they are the title of the newest release in Three-Sixty's popular V for Victory series. This game deposits you on sandy French soil the morning of June 7, 1944. It's the day after the largest invasion in human history, and you wear the beret of the commander of the Commonwealth forces.

Yesterday's orders were simple: Hit the beach, dig in, and don't get killed. Today the real work begins as you command the entire division, pushing your forces inland and overrunning the German defenses, bridge by bridge and town by town. You can call for air support and reinforcements, and, depending on weather and other factors, you might get some help. But whether or not assistance comes, you'd better move off the beach. Now!

This standalone game includes the very popular V for Victory game engine. For fans of this strategy system, Gold, Juno, Sword will provide a nice addition to the other D-Day scenarios. Those new to V for Victory will quickly understand why it's currently the leading computer strategy game.

Board Game Style

This is a board-gamer's computer game. You get all the detail and intricacies of the best strategy board games without having to keep up with a thousand game pieces or read a *War and Peace*-sized manual. Like any good strategy game, it takes numerous variables into account during every move, including weather and terrain features, fortification and defensive strengths, and lines of supply and communication.

Moving units is as simple as pointing and clicking, but the devil is in the details, and Gold, Juno, Sword doesn't miss a one. The complicated British invasion plan took advantage of glider troops, paratroopers, air support, and special assault vehicles. Incorporating all the pieces of this complex invasion puzzle may be more than you can handle at first. Luckily you have a loyal, dedicated computerized "staff assistant" ready to take over the minutiae, letting you concentrate on a winning

strategy. Like the other V for Victory games, Gold, Juno, Sword provides a colorful, detailed environment to play in. You can issue orders to whole stacks of units, or to each individual unit as you see fit.

Historically, the forces at Sword achieved all of their objectives, including the capture of the important Orne River Bridge. The Germans were especially slow to move heavy Panzer divisions south from Calais, which made it much easier for the Commonwealth forces. But if you adjust the options, Hitler will move these armored divisions immediately, challenging you with a much improved defense of the French countryside.

GAME-WINNING TIPS

Take the bridges, don't blow them up. You'll need them to move motorized units to the front.

Don't outrun your lines of supply and communication. Once the Germans reinforce, they'll try to cut you off where you're overextended.

Play the scenarios in order. Each one is a mini-tutorial, and if you play them in sequence you'll be well prepared to tackle the massive scenario that incorporates them all.



Move your troops inland quickly or watch them die on the beach.



Big, colorful maps show your superior forces poised to capture the city of Caen.

The Germans also were slow to activate their coastal defenses, giving the Allies precious time to establish their forces. You can correct these mistakes by taking control of Hitler's Atlantic Wall and throwing everything you've got into thwarting the Allied landing. To heighten the challenge and get the real flavor of the mission, randomize the weather conditions.

V for Victory players will be happy with Gold, Juno, Sword, and new players will look forward to completing the set when the Victory Pack debuts this winter. If you think you've got what it takes to push back the Germans and liberate France, this is the game for you.



Three-Sixty Pacific, 2105 S. Bascom Avenue, Suite 165, Campbell, CA 95008; 800-245-4525; PC, 386SX or faster; 3MB RAM; hard disk with 5MB free space; DOS 5.0 or later; supports Adlib and Sound Blaster sound boards; mouse required; \$59.95

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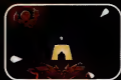
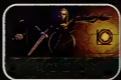


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Warlords II

By Barry Brenesal

The war gamers at SSG were a little stunned at the success of their 1992 fantasy war game, *Warlords*. And so they went into hiding and tried to figure out how to improve it without changing what they'd done right. The result is *Warlords II*—and if you liked the original, you'll love the sequel.

Visually, this game is a stunner. Like the original, *Warlords II* cleverly uses high-res, 16-color VGA for speed on the main display, but it adds 256-color VGA for special-event windows. Attractive touches abound—even in the small, multicolored Celtic crosses that illustrate the computer's progress as a game loads. The music score is a medieval/Renaissance-flavored delight.

Many of the best aspects of *Warlords II* aren't what you'd usually single out for praise in a game. Keyed commands, for instance, are preset, but you can reconfigure four of the iconized, mouse-driven commands. The help system is thorough and available by right-clicking your mouse. There's even a tutorial game that explains the commands,

map elements, and basic moves you make as you gleefully maul an inadequate opponent.

There are four basic types of characters in *Warlords II* to choose from: Human, Knight, Lord, or Warlord. The last three feature increasingly intelligent characters who offer bigger challenges. You can also pick from 24 "personalities" to flesh out the disposition of your character. Under Knight, for instance, there's Ethel the Unready, who builds the right troops in the wrong places. There's also Hand the Hammer, a powerful Warlord who conspires, betrays, and amasses his forces quickly.

Many options affect the difficulty of the game, including hidden and random maps. The Diplomacy option adds depth to *Warlords II*. Without it, all sides are at perpetual war. When it's on, you can choose to be Hostile, Neutral (attacks are allowed on armies but not



Warlords II makes sparing but effective use of 256-color VGA screens.

cities), or Allied (no attacks permitted). Players can send messages implementing changes in status.

Warlords II leaves out the ability to gang up, however—one of the nicest features in Koei Corporation's supremely nasty game, *Nobunaga's Ambition II*. There, you could ally with one computerized player and attack a third together—assuming your ally doesn't turn on you and join your opponent instead. *Warlords II* also lacks a personal touch. Each city looks identical to the

GAME-WINNING TIPS

Run, don't walk, to unexplored ruins.

Money is the only way to recruit extra heroes, the most powerful figures in the game.

In a scenario with lots of rivers, build flying creatures or you'll have a hard time getting around.

If you get a temple quest to pillage or raze a dozen towns, ignore it. It will do you more harm than good.



Use the Diplomatic screen to make and break peace treaties with individual opponents in *Warlords II*.



You can easily enter commands via mouse or pull-down key-activated menus in *Warlord II*'s intuitive main screen.

last, except for its revenue and production capabilities. The computer-driven characters are similarly lacking in detail.

But you can't beat SSG games when it comes to artificial intelligence. They fake nothing: Your computerized enemies have the same resources you do. If they play better at times, blame yourself for faltering. You'll feel as if you're up against a human being, and one who (at the higher levels) is disgustingly good.

Saddle up your dragons then, and venture forth onto the battlefields of *Warlords II*. You won't be disappointed.



Strategic Studies Group, P.O. Box 30085, Pensacola, FL 32503-1085; 904-469-8880; PC, 386 or faster; DOS 3.1 or later; 2MB RAM; supports AdLib, MT-32, PAS, Sound Blaster, and Sound Canvas sound boards; mouse required; \$69.95

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APBA Presents Baseball for Windows

By Larry Canale



A sharp mind, not a fast hand, wins games in this league.

The true-blue, dyed-in-the-wool, box score-devouring, hot dog-chomping baseball fan would pay hard cash to see the series of games I just finished on APBA Presents Baseball for Windows. What suspense! What a finish! What a game!

I had pitted the 1953 Yankees against the 1927 Pirates in a back-and-forth seven-game set that featured prodigious Mickey Mantle home runs and brilliant pitching by Whitey Ford. And that was just the beginning.

This game mirrors the excitement, the little ironies, and the sheer history of our national pastime in a way that makes me want to share all my stories with you. If you're a true-blue baseball fan, though, you'll want to try Baseball for Windows yourself.

Baseball for Windows, created by Miller Associates and based on the popular American Players Baseball Association's board game, is the update of the already champion-quality APBA Baseball for DOS. It'll burn its way into the heart of anyone who is obsessed with baseball's rich history, box scores, and statistics.

A Numbers Game

Ah, statistics. Did I mention that Baseball for Windows is a stats-based game? No hand-eye coordination test here; instead you'll see a script that describes the action between 2 of the 60 teams packaged with the program. Your physical

involvement is pretty limited to clicking a "pitch" icon and then a "hit" icon, plus a fair amount of reading. Several lines appear, describing the action in broadcaster lingo, clichés and all:

*"Susung on...
hit deep to left field...
way back...
Waner's racing back...
it's gone!
Grand slam for Mantle!"*

So if you're looking for action, look elsewhere. But if you want a detailed, accurate simulation of what it's like to manage in the majors, here's your chance.

Your managerial decisions are required when, for example, there's a runner on third with less than two outs. If the batter flies out or grounds out to the right side, a prompt appears and asks, "Try to score?"

Other situations to flex your coaching muscles include intentional walks, hit-and-run attempts, and stolen bases. (Hint: I've found that when a runner successfully steals second, he'll usually be able to steal third as well.)

The Choice Is Yours

Four basic directories give you four different ways to play the game:

- **Baseball** lets you play single games between any two teams you select from the data disk.
- **Advanced Draft** lets you recruit and waive players to your heart's content, rebuilding and reshaping any team as drastically as you want. If you're not sure about a player's capabilities, you can use minimized windows to pull up and compare one hitter's or pitcher's stats and grades against another's. An easy-to-use built-in



STATS Manager									
LEAGUE 1		W	L	PCT	GB	Last 19			
OAKLAND/72		2	1	.667	-	2-1			
NEW YORK/77		2	1	.667	-	2-1			
Highest Batting Average									
Top 10 players		TM	Lg	AVG	PA				
POSTER, G.		CIN	L2	.363	12				
PEREZ, T.		CIN	L2	.363	13				
CONCEPCION, D.		CIN	L2	.363	13				
Most Double Allowed									
Top 15 players		TM	Lg	2B					
ERSSINE, G.		BRO	L2	3					
CICOTTE, E.		CHI	L1	3					
DEAN, P.		SL	L2	3					
DEAN, O.		SL	L2	3					
Most Double Plays: Team									
Top 12 teams		DP	G						
BROOKLYN/53		6	3						
CHICAGO/17		3	3						
ST. LOUIS/24		4	3						
CINCINNATI/76		1	1						

Peruse more than seven decades of stats.



You can play any scenario, even pitting the best team of '79 against the stars of '23.

Help system guides you through the stats and the grades the program uses.

The special Pankin Optimizer feature presents the strongest possible lineup you can build from the roster you've assembled. Then there's the Markov Calculation function, which gives you the expected average number of runs that a given lineup will score per game.

- **League Manager** allows you to schedule a series between two teams—or a complete season to be played by any teams you wish—using the rules you choose for your league. Three separate, graphically attractive ballpark backgrounds are included, with others available separately.
- **StatManager** compiles the statistics and box scores from your season or series as it progresses. Those who want updated numbers can print out hitting, fielding, and pitching stat sheets after each game—a practice that will have the true fan swimming in pages of numbers.

Cursing Out the Ump

The 60 teams packaged in Baseball for Windows span the period from 1905 (the New York Giants) to 1982 (the Milwaukee Brewers). If you own previously published data disks with stats from vari-

A Crash Course In History

While it's fun to read, watch, and participate in the action, the real fun for baseball fans comes in the custom building of "all star" teams and in the ordering of your lineup and pitching rotation. Plus, the process of scanning through all the rosters, imparts a worthy crash course in baseball history.

In looking through the 1906 Chicago Cubs roster, for example, I discovered an outfielder named Bull Smith: Smith had only 1 at bat in 1906, and he struck out. (He had only 6 hits in 43 at bats in his entire three-year career, I later found out—a .140 average.) But I wanted the Bull to play, so I started him in right field against Tom Seaver and the '69 Mets. True to form, he went 0 for 8 with 7 strikeouts in a marathon 27-inning contest.

In that same game, I rediscovered pitching great Mordecai "Three-Finger" Brown, who also played true to form. Pitchers tended to go more than seven innings in baseball's early days, so I left Three-Finger in for the entire game. And if you don't think a 27-inning, 11-hit complete game is exciting, then you don't like baseball.

ous seasons, you can use those as well. Or, import players from Bill James's Baseball Encyclopedia.

There's a lot more detail to this game—more than I have space to tell you about. Among the realistic events that can plague your season are player injuries, getting "tired" or even "disabled," or getting tossed out of a game altogether. In a matchup of the 1972 A's vs. the 1977 Yankees, Willie Randolph was tossed out of a game for arguing a called third strike. In another game, Joe Collins of the Yankees was ejected for cursing out an ump. His language is rendered onscreen as "!!1?%@!1?%#@?1?%!!." But we know what he really meant.

1 2 3 4 5 6 7 8 9 10

Miller Associates, 11 Burtis Avenue, Suite 200, New Canaan, CT 06840; 800-654-5472; PC, 20 MHz 386 or faster; 3MB RAM, hard drive with at least 12MB free space; Windows 3.1 or later; supports Sound Blaster and compatible sound boards; \$69.95

I rediscovered
pitching great
Mordecai "Three-
Finger" Brown.

Microsoft Golf For Windows

By Mike Kogan

"On Par with Reality"? That's what the packaging claims, and Microsoft Golf, a CD-ROM multimedia title for Windows 3.1, comes pretty darn close. Golf uses audio effects and live-action video to give you the total TV golf experience—right on your own desktop.

Those familiar with the Links products will recognize Microsoft Golf—it's the Windows version of Access Software's Links: The Challenge with a collection of multimedia enhancements. You'll need a CD-ROM drive and sound card, but you won't need a pumped-up system: It runs well on a 25MHz 486 with 4MB RAM. And you don't need a double-speed CD-ROM drive, either.

Microsoft Golf features the Torrey Pines South Course, home of the PGA Buick Invitational of California. A series of video clips gives you flybys, tips from the pros, and a course profile describing the course and its setting as a TV commentator would. Once you start a round, there is a flyby and pro tip for each hole on the course.

It also comes with awesome sound effects, wildlife noises, commentary, and music. If you select wacky sounds to accompany your game, you'll get taunting jungle sounds rather than the peaceful chirps and croaks of crickets and frogs. Pop into a sandtrap, and Middle Eastern music will make you think that you've landed in the Sahara. Golf even gives you the power to customize and create your own sounds.

Step Up to the Tee

You're definitely in control when you step up to the tee. The player screen is divided into six separate information windows. While the main view shows the golfer and the hole being played, you use the swing control window for club selection and swing. There's a shot info window that details wind conditions and shot distances, and a top view that gives you an overhead shot of the hole. The advanced shot setup lets you fine-tune the player's stance. And of course, you get the all-important scorecard window to foster competitive egadness.

The best advice for playing Microsoft Golf is the same as for real golf—keep it down the middle and don't overswing. Try to absolutely crunch each shot and you'll see the entire course—including



ing every tree, lake, and hazard. By taking controlled swings and staying down the middle, you'll get many scoring opportunities. And you'll receive a major dose of glory when you take a John Daly-esque whack and hit it on the pins for a 350-plus yard drive.

Although Microsoft Golf has multimedia features not available in Links386 Pro, it doesn't

WHICH DO YOU PREFER?

FEATURES IN MS GOLF

- Course profile video
- Flyby videos
- Pro tip videos
- Customizable sound sets
- Delayed player animation

FEATURES IN LINKS386 PRO

- High-resolution course graphics
- Multiple simultaneous views
- Course conditions settings
- Enhanced swing controls
- Recorded players/saved shots



The player in the main view is lifelike, with a smooth animated swing.



Fine-tune the player's stance in the advanced shot setup window.

include many of Links386 Pro's play enhancements. Keep your eye out for a version of Microsoft Golf that incorporates the improved features of Links386 Pro and support for the higher-resolution course files. In the meantime, this game breaks new ground in its integration of videos into the game play and will be an asset to any sports-loving MPC owner.



Microsoft Corporation, One Microsoft Way, Redmond, WA 98052-6399; 800-426-9400; multimedia PC, 386SX or faster recommended; 4MB RAM; hard disk with at least 5MB free space; DOS 3.1 or later; Windows 3.1 or later; supports all major sound boards with digitized speech; mouse recommended; \$64.95

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6AA

A League of Your Own NHL Hockey

By Dan Muse

A League of Your Own NHL Hockey has a lot going for it. For one thing, it's officially licensed by both the National Hockey League and National Hockey League Players' Association. That means that the game can use the real NHL team names and logos, as well as the names and statistics of every NHL player from the 1992-93 season.

Better still, the game sports graphics, animation, sound, and even video that stands up to the excitement of hockey itself. A good repertoire of graphics screens plus a likable user interface make it a pleasure to set up and maneuver. NHL Hockey is complete with all the trimmings. If you're a hockey fan, you'll spend hours lining up checks and blasting slapshots in NHL Hockey.

Taking Control

Hockey is a sport that's tough to play and chaotic to watch, and hockey sim games are no different. The action is fast to begin with in NHL Hockey, and things can quickly get out of hand until you get the hang of controlling the players. It can also be hard to follow the puck, since in order to show the players at a decent size, NHL

Hockey displays only about a third of the ice surface.

When your team is on the offense, you control the player who has the puck. While this means you're always in the middle of the action, it's also easy for you to have players off side if you aren't paying attention. For example, if your defenseman has the puck and you have him rush up ice, you must remember to return him to his position should he lose the puck.

When playing defense, you can either keep control of



Until you figure out how to control the players, things can seem a little too fast and furious.

the player on your team who last touched the puck or change control to the defender closest to the puck. You never control the goaltender, which is probably a blessing for a lot of players. The only goaltending responsibility you carry comes after the save: If your goalie holds on to the puck, you have the option of doing nothing, which will result in the referee blowing the whistle for a face-off, or of passing the puck to a nearby player and continuing play.

NHL Hockey offers some interesting and enjoyable options for league and tournament play. You can create multiple leagues with up to 24 different people representing teams in each league. One of my favorite options is the Play-off Series. You can set up three-, five-, or seven-game series. You can go right to the Stanley Cup finals or play through each of the play-offs leading up to the finals. If you're a purist, you can play the entire 82-game schedule before the play-offs begin.

EA Sports has gone the extra mile to ensure a true feel for the game. If you love hockey or just want to learn more about the game, NHL Hockey is almost as exciting as the sound of sharp metal blades cutting into fresh ice.

GAME-WINNING TIPS

Don't have your goalie give the puck to a teammate when your opponents are hanging around the net.

When the other team has the puck, don't always take control of the player closest to the puck.

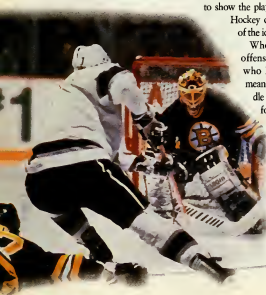
Don't be a puck hog. You'll score more if you pass your way up the ice.

1 2 3 4 5 6 7 8 9 10

Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404; 800-245-4525; PC, 33MHz 386SX or faster; 2MB RAM; hard disk with 10MB free space; DOS 5.0 or later; supports AdLib, Roland, and Sound Blaster sound boards; \$69.95



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Front Page Sports: Football Pro

By Wayne Kawamoto



Last year, Dynamix had a clear ground gainer with Front Page Sports: Football, an all-around football simulation that offered solid action, pigskin fundamentals, and strategy with excellent graphics and sound. Now, to make a great game even better, Dynamix is upgrading to Front Page Sports: Football Pro. Like its predecessor, Football Pro breaks into the secondary and goes long, leaving the rest of the field flat-footed.

Pro's biggest improvement is offering NFL players as well as their stats, names, and numbers. Although the teams are fictional (Troy Aikman plays for the Dallas "Ranchers"), you can coach the pros by using the stats of real players, like Landry and Ditka. This is a vast improvement over the made-up players that other PC football games offer.

Fast and Furious

As before, you get to choose your role: play the quarterback avoiding the blitz, the team owner and general manager hawking the trades, or the coach calling the plays from the sidelines.

As quarterback, you carry out the plays in fervent arcade gridiron action, and you have superior control over running, passing, and handing off. You can play and view the action from nine different angles—including the new "blimp" view. Team-owner options include trading players, signing free agents, and participating in the college draft. And as the coach, you call the plays from an astounding 1,000 stock plays—up from 200 in the original.

If that's not enough, you can also create your own plays with the play editor. Tell each player what to do and where to go, define the play before and after the snap, and assign logic to the key players to look for passes or block before going

out on offense. This is the best and most thorough play designer in PC football. A new coaching profile feature lets you edit the criteria for calling plays in some 2,500 situations based on down, field position, point differential, yards to go, and time left on the clock.

Bone-Crushing Tackles

Play can span a single season (16 games) or several seasons. As each season progresses, Pro compiles and displays team standings, league schedules, league leaders, injuries, and trades. Up to 28 teams can play in a league, and all are available to human players. These player-controlled teams can be password protected (you may be playing among friends, but this is competitive football, after all).

For league play, Pro lets you define ground rules and simulate games using a faster algorithm, which can simulate a week in some twenty seconds. The downside is that there aren't any resulting stats. But Dynamix does offer differ-

GAME-WINNING TIPS

Use the stiff arm and spins to avoid being tackled.

Running the same play again and again is a good way to lose again and again.

Give tired players a seat on the bench.

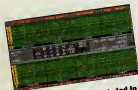
On running plays, load up on blockers. Use everyone you can, even the wide receivers.



The kicking game is but one aspect of Football Pro.



Football Pro offers great gridiron action and graphics from nine different camera angles.



1,000 stock plays are included in Football Pro.

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1 2 3 4 5 6 7 8 9 10

Dynamix, 1600 Millrace Dr., Eugene, OR 97403; 800-326-6654; PC, 25MHz 386 or faster; 2MB RAM; hard disk with 9MB free space; DOS 5.0 or later; supports all major sound boards with digitized speech; mouse and SmartDrive recommended; \$79.95

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The Joy of Sticks

Millions of people cheerfully spend thousands of dollars on the latest personal computers to squeeze out an extra measure of performance. They lay out big bucks for giant high-resolution monitors to make sure they get a clear view of every pixel. They drop hundreds on fancy 16-bit sound cards that only a few products support. They blow another hefty chunk of change on sweet-sounding speakers that outperform the ones connected to their stereo. And they pay who knows how much to assemble complete libraries of advanced game and multimedia software.

Then they control the whole thing with the same mouse they use for mundane word processing. Or just as bad, they buy the cheapest no-name joystick they can find, or one that simply isn't designed for the game they want to play. I know, I've done it myself.

Granted, there are times when all you need is a generic joystick. If you're just mucking around with an old copy of *Bad Street Brawler*, it'll work fine—until you try a roundhouse kick and snap your bargain stick in half. But for optimal performance on advanced games such as *IndyCar Racing* or *Falcon 3.0*, you need a joystick that's just as hot as the rest of your system.

Finding just the right stick isn't easy, though. Competent, well-designed joysticks come in a wide variety of types, configurations, sizes, and price ranges. You need to do some careful shopping to make sure you end up with the right one.

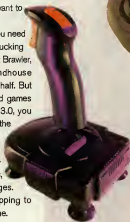
Five Paths to Joy

Modern joysticks come in five main categories: joypads, desktop models, pistol-grip flightsticks, yokes, and hybrids.

JOYPADS look like the control decks that come with Nintendo and Sega gaming systems. They usually have more than two buttons, and left-handed gamers can reverse some of them for easier play. These compact, comfortable, and generally inexpensive sticks are ideal for arcade-type games such as *Prince of Persia*.



Flightstick Pro
(PC, \$99.95)



Winner 900 Sniper
(PC, \$19.95)



G-Force
(PC, \$89.99)



Starfighter 5
(PC, \$14.99)

Lefties will love the reversal feature of Advanced Gravis's Mac and PC GamePads. For more traditional joystick control, screw the special stick into the center of the control pad.

Winner Products and QuickShot Technology also compete in the joypad market. QuickShot's inexpensive *Starfighter 5* doesn't reverse, but it includes a pair of fire buttons and an auto-fire mode. Winner's four-button 707 is reversible and even comes bundled with a pair of popular shareware games from Apogee: *Duke Nukem* and *Commander Keen*.

Suncore Technologies' *Command Control* also includes two Apogee shareware titles: *Duke Nukem* (again) and *Major Stryker*. And it features a fifth button that lets you fire the A and B buttons simultaneously.

DESKTOP MODELS provide precise fingertip control for games requiring dexterity, particularly sports simulations. Although they look low-tech in their square-edged, putty-colored cases, they offer exceptional durability and precision.

One of the classic desktop models is Kraft Systems' KC3. You can set the KC3's stick to be free-floating or spring-centered, and a stick-top fire button aids in faster shooting. Kraft stands behind the KC3 with a five-year warranty, too.

CH Products' Mach 3 makes a tough competitor for the KC3. In addition, the Mach 3 has a stick-top fire button and free-floating option, plus rotary trim controls with centering indicators.

Kraft doesn't forget you Mac owners, either. Its KM30 joystick will match the color of your Apple. Double-click buttons save you some thumb pumping by letting you open applications with a single click. And it also has a five-year warranty.

PISTOL-GRIP FLIGHTSTICKS look like the control sticks found in real fighter aircraft. This type of joystick often includes trigger and thumb buttons, as well as a throttle control. Not surprisingly, they work great for flight simulators, but they

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can feel awkward with arcade and sports games that require the precision offered by desktop and joystick models.

Most pistol-grip models reflect the serious, no-nonsense nature of flight simulation software. Combine ThrustMaster's Flight Control System (FCS) with the company's Mark II Weapons Control System (WCS), and you'll get a real sense of what it's like to fly the hottest combat planes in the sky.

The FCS comes with four buttons and a four-way "hat" (a smaller joystick-on-a-joystick). You can plug the FCS into the WCS throttle control and get six more buttons and a rocker switch, basically eliminating the need for the keyboard. Best of all, you can map the buttons to execute any keyboard function. No more hunting for the chaff key while a bogie sends steel up your tailpipe.

CH Products' Flightstick Pro is another hot multibutton joystick, but it's not as slick as the FCS. The Flightstick Pro arranges four fire buttons in a hat similar to the ThrustMaster FCS's. Several software companies, including Spectrum HoloByte and LucasArts, support those extra buttons in their newest games and simulators.

Suncom also has a unique entrant in this category. The FX2000's streamlined gray plastic housing looks almost organic. The case is grooved to fit your hand and wrist comfortably, and you can twist the stick to work equally well whether you're right- or left-handed.

YOKES, the surreal steering wheels of the joystick set, simulate the feel of flight by providing you with controls similar to those found in small planes. Typically, they mount to your desk with either suction cups or clamps. Though pricey, yokes really make flight simulators and car-racing games shine.

Once again, CH Products hits the mark with Virtual Pilot. This flight yoke includes throttle controls and thumb-operated fire buttons. It also works well as a steering wheel for auto racing games.

But if your driving ambition is more driving than flying, check out the G-Force from Suncom. Great for flight games, the G-Force is also perfect for wheeled simulations because it lets you lock the column to make it respond more like a real steering wheel.



Mark II Weapons Control System (Mac, \$99; PC, \$149.95) and Flight Control System (Mac, \$99.95; PC, \$99.95)



CyberMan (PC, \$129)



GamePad (Mac, \$49.95; PC, \$29.95)



KM30 (Mac, \$79.95)

HYBRIDS are loners that don't fit comfortably in any category. That label perfectly describes Logitech's groundbreaking CyberMan controller. This combination joystick/mouse/hand-massager gives you 3-D control and adds tactile feedback. With this baby in hand, when you get hit with enemy fire you won't just hear the explosion, you'll feel the vibration in your CyberMan. It may be a while before many games gear up to take advantage of all of CyberMan's features, but Forgotten Castles from Twin Dolphin Games and Origin Systems' Shadowcaster are already in the fold.

Five Easy Questions

With such a wide variety of choices, make sure you choose the right category of joystick for the kinds of games you like to play. That snazzy, high-tech anodized aluminum job with the 16 fire buttons and throttle control could turn you into an ace in Falcon 3.0, but a less expensive joypad will score you more touchdowns in Football Pro.

Once you decide which type of joystick you want, it's time to go shopping for a particular model. When you're comparing different joysticks, consider the following questions:

- **Does it fit well in your hand?** While many joysticks claim to be ergonomic, what's perfect for one person's hand could be uncomfortable for someone else. So get the stick that fits the best.
- **Is the cord long enough?** Shorter cords were fine when most PCs sat on the desktop, but if you own a computer with a tower case, you want to have plenty of cord. The longest run about seven feet.
- **Do you really need all those features?** Don't get seduced by a long list of meaningless features. Remember, it's only cool if it helps you increase your score.
- **Are the joystick's features supported by software vendors, or can you configure it to work with unsupported games?** A joystick with four buttons and a throttle control may look great, but it doesn't do you any good if software vendors don't provide connections to the buttons. Some joystick manufacturers include utilities that let you reprogram the buttons to work with almost any game. Others

use the extra buttons as auto-fire controls to let you wreak havoc in shoot-'em-up games.

- **How long is the warranty?** Joysticks suffer more abuse than most computer components and should be built to take it. Warranties range anywhere from 90 days to five

years. A longer warranty period expresses the manufacturer's faith in its product.

Finally, no matter how much you like your favorite joystick, you can't expect it to deliver optimum performance with every game you

play. If you play a wide variety of games, you may need an equally diverse selection of joysticks. If you have to settle for just one, pick the model that best matches the games you like most. To help, we've rounded up the stats on 23 of them below.



A JOYSTICK BRIEFING

Product*	Type	Price	Vendor	Phone Number	Features
KC3	Desktop	\$24.95	Kraft Systems	619-724-7146	Stick-top button, spring disable
KM30 (Mac)	Desktop	\$79.95	Kraft Systems	619-724-7146	Stick-top button, spring disable
Mach 3	Desktop	\$49.95	CH Products	800-624-5804	Three buttons (two independent), stick-top button, spring disable
Analog Pro	Flight	\$59.95	Advanced Gravis Computer Technology	800-663-8558	Five buttons (four independent), throttle control, adjustable tension, padded grip
Flight Control System (Mac/PC)	Flight	\$99.95 (Mac) \$99.95 (PC)	ThrustMaster	503-639-3200	Four buttons, four-way hat, realistic styling
Flightstick Pro	Flight	\$99.95	CH Products	800-624-5804	Four buttons, four-way hat, throttle control
FX2000	Flight	\$39.99	Suncom Technologies	708-647-4040	Ergonomic design, suction feet, auto-fire, throttle control, reversible fire buttons
Intruder 5	Flight	\$34.99	QuickShot Technology	510-490-7968	Dual-speed auto-fire, eject button for fire-button cover
MouseStick II (Mac)	Flight	\$99.95	Advanced Gravis Computer Technology	800-663-8558	Five buttons, preconfigured for common games, adjustable tension, padded grip
PC Commander	Flight	\$29.95	STD Entertainment (USA)	410-785-5661	Auto-fire, auto-centering
Thunderstick	Flight	\$39.95	Kraft Systems	619-724-7146	Throttle, suction feet
Warrior 5 Plus	Flight	\$16.99	QuickShot Technology	510-490-7968	Auto-centering, auto-fire
Winner 900 Sniper	Flight	\$19.95	Winner Products	909-595-2490	Suction feet
Cyberman	Hybrid	\$129	Logitech	800-732-2935	Full three-dimensional control, vibrating tactile feedback
Mark II Weapons Control System (Mac/PC)	Hybrid	\$99.95 (Mac) \$149.95 (PC)	ThrustMaster	503-639-3200	Throttle control, six programmable buttons, programmable toggle switch
Command Control Pad	Joypad	\$29.99	Suncom Technologies	708-647-4040	Five buttons (A-B, auto-fire A-B, and A-B simultaneously)
GamePad (Mac/PC)	Joypad	\$49.95 (Mac) \$29.95 (PC)	Advanced Gravis Computer Technology	800-663-8558	Reversible, four buttons, stick can be added to pad, auto-fire
Starfighter 5	Joypad	\$14.99	QuickShot Technology	510-490-7968	Auto-centering, auto-fire
Turbo Triax	Joypad	\$29.95	Triax Technologies	800-858-7429	Uses touch-sensitive pad for direction control
Winner 707	Joypad	\$29.95	Winner Products	909-595-2490	Reversible, four-buttons, auto-fire
Flight Yoke 2000	Yoke	\$89.95	Winner Products	909-595-2490	Suction feet or clamp mount, throttle control
G-Force	Yoke	\$89.99	Suncom Technologies	708-647-4040	Suction feet or clamp mount, reversible fire buttons, throttle, column lock for use as a steering wheel
Virtual Pilot	Yoke	\$109.95	CH Products	800-624-5804	Two buttons, throttle control, aileron and elevator controls, desk clamps

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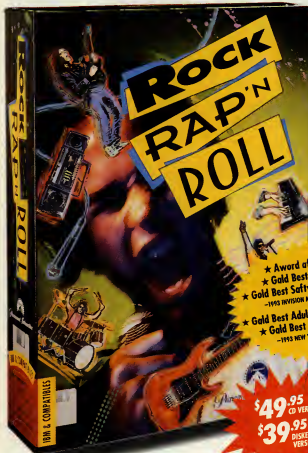
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The Sound and the Fury

Unless you're very lucky, you won't be able to simply plug in your new sound board and get sound. IRQ, DMA, HEX, MIDI... who knows what these strange acronyms mean? But unless you do, odds are you're in for some trouble.

But don't put all the blame on the sound card makers. The PC industry as a whole has to take some of the rap. Despite startling performance increases, PCs today bear an amazing resemblance to the original IBM clunkers of a decade ago. That standardization and scalability helped build the software industry, but it's also forced hardware developers to patch their wares onto a frame that was never intended to run stereo sound.

That's why your sound card may end up conflicting with the hardware and software already in your system. You'll discover it when you don't get a peep out of your speakers or when your system crashes altogether. At that point you've got no choice but to start digging into your PC's guts.

On the bright side, companies such as Micro-soft and Intel are working on a "plug-and-play" standard designed to give PCs, add-ons, and software a common language. That will let new hardware work properly in existing PCs with little or no intervention from you. Even better, new software will also be able to use it to get information from the system about video, audio, mice, and joysticks and automatically configure the system for maximum performance.

The bad news is that such plug-and-play power is a year or more away. (If you can't wait, buy a Mac.) In the meantime, here are a few common terms you need to know to make sure your sound card will work properly. And if you still have trouble, at least your vocabulary will impress the computer superstore salesman when you return the balky components.

DMA (Direct Memory Access) Channel:

This path creates a hot line to your system's memory that bypasses the PC's processor. Sound cards use DMA channels to gain quick access to large amounts of sound data stored in your computer's memory. Some cards let you select from several DMA channels if one causes a conflict. Other boards just let you turn the DMA channel on and off. Turning it off will

resolve the conflict, but you'll limit your card's sound playback capabilities in the process.

FM (Frequency Modulation) Synthesis:

Most games use FM synthesis to create their music and sound effects. A synthesizer generates "carrier" audio waves that are altered by "modulator" waves to create a variety of sounds. Most game developers use "two-operator" FM

synthesis, because it's the lowest common denominator among existing sound cards. Unfortunately, the sound you get from two-operator FM synthesis isn't impressive.

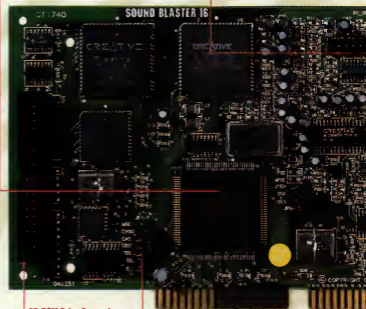
MIDI (Musical Instrument Digital Interface):

This common language lets synthesizers and computers talk to each other and control a variety of sound-producing and sound-

Learn Your Way Around Your Sound Card

Main Processor: This can be an application-specific integrated circuit (ASIC) designed specifically for sound applications, or a more general-purpose digital signal processor (DSP) that can run a variety of software. DSPs translate to more flexibility and easier upgrades. Some cards, such as Creative Labs' Sound Blaster 16 with Advanced Integrated Signal Processing, have both.

Feature Connector: Some sound cards support "daughter" boards to add new features. For example, Creative Labs provides General MIDI compatibility by letting you attach a Wave Blaster daughterboard to its sound card.



CD-ROM Drive Connector:

Lets you attach a CD-ROM drive directly to your computer, without a separate interface board. Industry-standard Small Computer Systems Interface (SCSI) links work with almost any SCSI drive. Proprietary interfaces support only a few drives.

Jumpers: These configure such features as whether the joystick port is active and if the card will have Sound Blaster compatibility. Jumpers are difficult to manipulate and easy to lose, and you must remove the card from the system to change them. That's why some card manufacturers use "dip switches," they on/off switches, instead of jumpers. Even better are cards that use no jumpers at all.

altering devices. Properly equipped keyboards, samplers, and sequencers can all work with the MIDI standard.

General MIDI: This set of specifications for 128 different synthesized instrument sounds lets musicians create music in a studio and know that it will sound fairly similar running on any other General MIDI-compliant device or musical instrument. Because it can use sampled sounds, General MIDI promises much higher sound quality than FM synthesis. A few of the latest sound cards already use General MIDI, and you can expect to see more games supporting it as the cost of hardware comes down.

I/O Address: PC components have address-

es, too. These numerical locations tell the PC where to reach and access information from your sound card. During installation, most cards give you a choice of possible addresses. Don't double up! If two cards have the same address, your PC will become one confused mailman.

IRQ (Interrupt Request) Line: That's pronounced I-R-Q, not "irk," though you might say the latter is more likely. Components such as floppy drives, printers, and sound cards use IRQs to grab the attention of the central processor when it's working on something else. Two components using the same IRQ setting may conflict with each other if they need attention at the same time—which is quite likely to occur.

Wavetable and Waveguide: Today's wavetable technology uses samples of real instruments to synthesize particular sounds. Unfortunately, these samples tend to consume a lot of memory. The newer waveguide technology creates a mathematical model of how certain instruments create sound. You can electronically vary the model in unlimited ways, so a single waveguide representation of a flute can simulate everything from the slightest breath to full volume.

QSound: A patented technique for placing a sound source in three dimensions, using just two speakers. Adding QSound is expensive, but several software developers and sound card manufacturers, including Creative Labs, are using it.

PC Speaker Connector:

This is where the internal PC speaker attaches to the sound card.

Internal Audio Connector: With this

connector, you can attach the Audio Out port on your CD-ROM drive directly to the sound card, which lets you play audio from the drive through the speakers attached to the card.

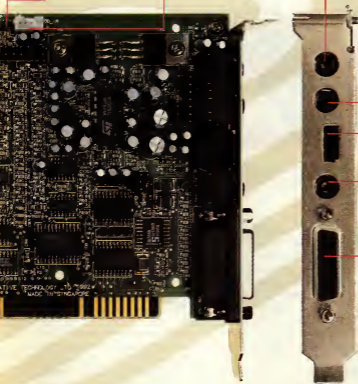
Stereo Line In: This connects sound sources that you want to record digitally or listen to through your PC, such as CD players, keyboards, or radios.

Mono In/Microphone In: Plug in a microphone here and use your card to record your voice or sample sounds. You can even use voice recognition if your board supports it.

Volume Control: Not all sound cards have one. Some control the volume via software.

Stereo Line Out: This low-power connection links the card to speakers, headphones, or external recording devices. Some cards also include amplified outputs.

MIDI/Joystick Connector: Attach a joystick here to play games, or use this connector as a MIDI port to let your PC work with such MIDI devices as synthesizers, sequencers, and samplers.





TechShop

S.O.S.

Let's face it, everyone needs a little help sometimes, and this is where to find it.

We'll search high and low to solve the tough questions that come between you and your toys, like how to free up more memory for your games, why that fancy CD-ROM multimedia title you just bought won't work in your machine, and what to do when your Sound Blaster won't blast. C'mon, give us your best shot. We can take it.

Don't Get IRQed, Get Even

I've been trying to install a new game, but it keeps asking me what "IRQ" my sound card is using. I'm not really sure what an IRQ is, but a friend told me that if I pick one that is being used by something else in my PC, it could cause problems. How do I find out what IRQs my machine uses?

Andrew Wilder
Portland, Maine

Ah yes, the dreaded IRQ.

First, know your enemy. Think of an IRQ, or Interrupt Request Channel, as the "radio frequency" over which a piece of hardware such as a sound card communicates with the PC's processor.

Each hardware device needs its own frequency so the processor always knows what it's dealing with. Unfortunately, PCs don't have a standardized way to make sure that every device gets its own frequency. Typically, PCs let each device pick its own and then hope for the best. (Imagine if the FCC let radio stations choose their own frequencies and simply hoped that everyone would pick a different one!) Inevitably, two devices choose the same frequency, resulting in garbled information followed by a fatal system crash.

To avoid this fate, run a diagnostic utility such as Quarterdeck Office Systems' Manifest or Dariana Software's WinSieuth. These easy-to-use products will tell you which device is using what IRQ, and which channels are still available. For the complete high-tech solution, list your system's open IRQs on a yellow sticky and paste it on your monitor for future reference.

Teed Off at Your Caddy?

What's the deal with these cheesy plastic CD caddies that CD-ROM drives make us use? I keep losing mine and can never find it when I need it. Why can't CD-ROM drives be like the CD player in my stereo



and use a permanent tray? Do any companies make CD-ROM drives with trays?

Rene Wilson
Harvard, Massachusetts

It's hard to believe, but CD-ROM drives don't use caddies just to annoy you. Those plastic puzzle boxes actually help keep ham-handed computer users from scratching the bits right off of their discs with careless handling. While you may not care that much about your precious copy of *The Complete Monkees* or *Ultima CXVI*, business users who have to protect 500MB of irreplaceable accounting data are less cavalier, and they probably think the caddy is worth the hassle. Of course, I can't imagine being in much of a rush to load a half a gigabyte of bitmaps for bean counters either.

If you're like me, willing to take a couple of

Caddy questions, irksome IRQs, and modem madness

risks just to get that disc in the slot a little faster, take a look around. Caddyless CD-ROM drives are available from NEC and Sony, among others, or you might want to check out Creative Labs' OmniCD double-speed tray-style CD-ROM drive.

A Memory Fairy Tale

A few of my PC games won't even load unless I boot my system from a so-called "installation boot disk" instead of from my hard drive. That can be a real hassle. What is an installation boot disk, why do I need one, and how can I create my own?

Margaret Adams
Minneapolis, Minnesota

Once upon a time when DOS was young, a short-sighted IBM decreed that 640K of memory would be enough for everyone. Who could blame it? At the time, 640K looked like an endless ocean, and no one worried about ever running out. Cute little .COM files frolicked while memory-resident notepads and calculators flitted happily to and fro. It was a carefree time, but one not destined to last.

As new and larger device drivers arrived to run everything from mice to multimedia, the prime real estate below 640K got crowded. Technology advances opened up additional memory space above 640K, but many applications, utilities, and drivers still demanded access to the "conventional memory" under 640K.

Unfortunately, today's high-powered multimedia games don't like to be crowded. Sometimes there simply isn't enough conventional memory left to load them. If you get an "insufficient memory" message when you try to run your favorite game, you may have to create a "boot disk" that loads only the most basic DOS files, leaving as much memory free as possible.

To create a boot disk, toss a blank disk in the A drive, type `FORMAT A: /S` at the DOS prompt, and then hit Enter. Whenever you want to run the memory-hungry game, insert the boot disk and restart your system. Check your game's documentation if you run into any further prob-

lems; some titles insist on minor modifications to the boot disk.

You can always improve on the situation by adding a memory manager, or escape it altogether with OS/2 or Windows NT. Just don't expect your favorite games to follow for a while.

High-Cost Cheating

I'm morally against calling a 900 number and paying a fortune for hints on a game that I already shelled out \$50 to buy. Is there anyplace else I can go to get hints? Don't tell me to buy a hint book. I'm against spending money on that, too.

Tom Aspin
Miami, Florida

Let me see if I have this straight. You're morally against paying someone to help you cheat, but if you can cheat for free, that's okay. Just wanted to make sure we understand each other.



This is America in the nineties, so you shouldn't have any problem. You can find lots of cheats, er, hints on electronic bulletin board services such as America Online (800-227-6364), CompuServe (800-848-8990), and many of the thousands of smaller BBS's around the country. BBS's often have forums dedicated to helping people get through games without the torture—or the fun—of actually having to solve the puzzles on their own. You'll need a modem, of course, and you'll probably have to pay a subscription fee or connect time charge. But at least you won't be giving any more support to

that evil software company whose game you so enjoy.

Faster Is Better

I am considering buying a modem to fool around on CompuServe and play online games, but I'm a little confused about what I should get. The 2,400-bit-per-second (bps) modems are certainly cheap enough, but the sales guy said I'll save money in the long run with a 9,600-bps model. And what about the new 14.4-Kbps modems?

Scott Nash
San Francisco, California

Buy the fastest modem you can afford. Sure, the 2,400-bps modems are cheap, but they'll cost you time, money, and aggravation every time you try to download a file. Most online services now support at least 9,600-bps communications with some going all the way to

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TechShop S.O.S.

14.4-Kbps. With a 2,400-bps modem, it'll take you four times as long to download a file as it would at 9,600 bps, and the time savings are even greater at 14.4 Kbps. And these days, speedy modems don't cost that much more than their pokey cousins.

The bad news is that some services (CompuServe included) charge more to use the higher-speed lines (bless their greedy little hearts). If all you want to do is send and read mail, unless you type like Clark Kent you'll end up dropping a few extra bucks. But as soon as you start downloading software, the faster modems will cut a big chunk out of your bill, quickly earning back your investment. And faster downloads mean more time for the rest of your life.

Doing Windows?

I recently loaded a game on my system that said it "runs under Windows" on the box. It doesn't look like my other Windows applications, though. In fact, it looks exactly the same as it does under DOS. Why would the company say it runs under Windows if it really runs under DOS?

Dave Spaulding
Philadelphia, Pennsylvania

First of all, they're lying. Nothing really "runs" under Microsoft Windows. A brisk walk is about all you can hope for.

Once we establish that, you need to know that there are two ways to submit to Microsoft's browbeating concerning its graphical environment. In this case, the developers of your new



game are actually claiming that they have knuckled under halfway. Their product no longer does anything that Windows might consider a no-no, such as monopolizing every bit of memory on your system. That's euphemistically called "running under Windows." All it really means is that you can launch the same old

DOS program from a Windows icon without making your system crash and burn.

Developers who want to go all the way with the boys from Redmond must comply with the Windows application programming interface. This API is Microsoft's attempt to make all true Windows software look and act the same—

Fax, mail, or e-mail your queries to the S.O.S. staff at:

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We can't respond to every question or send personal responses, but we will answer the most pertinent questions here.

kind of like the Borg used to be on "Star Trek: The Next Generation." Only then do you get a true Windows application, complete with the menus, icons, and other attractive trappings.

Multimedia Impaired

I have an old PC/XT that I don't want to get rid of. What's the easiest way to convert it to a multimedia system? And I don't want to spend too much money, either.

Eric Foster
San Francisco, California

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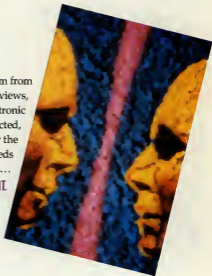
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King Pong

More than 20 years ago, in November of 1972, I shipped my first Pong game. You remember Pong, the incredibly addictive computerized ping-pong simulation that turned the world on to video games.

Sure, Pong is a dinosaur compared to its whiz-bang descendants in homes and arcades today. But before you dismiss Pong completely, consider its instructions. They read:

**Insert Quarter
Ball Will Serve Automatically
Avoid Missing Ball for High Score**

And even those simple rules were superfluous. Almost anyone could figure out how to play just by glancing at the screen.

This is definitely not the case with today's high-tech breed of arcade and computer games. I took my kids to the local game center recently, and I was floored to see how complex and intimidating the games have become. Despite impressive technological advances, I think we've lost something really important. With the possible exception of Tetris, games are no longer satisfying, addictive, and fun for *everyone*. They only appeal to experts. And that's sad.

Avid game players may overlook the endless, often gratuitous complexity of today's computer games. Experienced players and game designers share a common knowledge base that makes the intricate series of moves needed to play seem natural and intuitive.

But what about the rest of the population, that vast majority of people who don't have the time and energy to learn the repertoire of moves and tricks needed to enjoy a new game? Today's game designers seem to be blowing off casual users in a misguided attempt to stay ahead of an increasingly rare-

ed group of experts. They build in all sorts of new features and variations on existing games to please the skilled gamers. But these very enhancements can make the game less appealing to the average or beginning player.

The cycle breaks only when game designers come up with a new game metaphor. Everyone starts out as a novice, but as soon as avid players get up to speed, designers feel forced to raise the stakes again. It's incredible.

I think today's game makers have forgotten half of their mission. They don't seem to realize that they're hurting their industry by discouraging new players. It's like making new tennis players learn by trying to beat Pete Sampras: You're out of the game so fast you don't have time to figure out what to do.

Back at Atari, we tried to solve this problem in several ways. The first and probably most obvious method was to start slow and continually increase the speed of the game as it went along. This works great for a while, but when the speed escalates too far, the players get thrashed by the computer's hyper-speed action. Eventually, they reach their limit and give up.

Another approach we tried was to let advanced players jump in at higher levels. But this required careful tuning to make sure practiced players didn't feel cheated out of a full-length game.

For arcade games, the best approach may be the so-called "buy-in," which lets players

insert a new coin to gain new "lives" at the point of defeat. Advanced players get the high-level action they crave, and arcade owners collect more quarters.

With some rudimentary artificial intelligence, though, designers should soon be able to create games that seamlessly adapt to the player's skill level, instincts, and impulses, always presenting just the right level of difficulty. The machine will monitor subtle factors—speed and accuracy, for example—and respond accordingly. Such a "smart" game would serve it up slow and simple to novices, but could quickly throw more complex challenges at skilled gamers.

Of course, no matter how cleverly a game conforms to our expectations and abilities, playing against a computer will never be as much fun as competing against a well-matched human opponent. And adding advanced networking technology to smart games could make it easy to find one, since the system would know the skill levels of all the players

logged on to the network.

That can be important. After all, it's been more than two decades, and I'm still looking for someone who can beat me at Pong.

Takers?

Nolan K. Bushnell invented Pong, founded Atari, and created Chuck E. Cheese. He is currently chairman of Octus, in San Diego, California, the maker of PTA software. Write him c/o Electronic Entertainment.

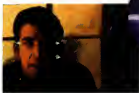


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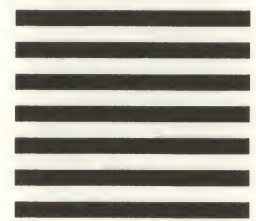
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